

fifth edition

MATHS MATE



trial pack

Includes:

How to use Maths Mate

Record keeping sheet: Term 1

Worksheet masters: Term 1, Sheets 1 to 4

Test masters: 1A & 1B

Worksheet answers: Term 1, Sheets 1 to 4

Test answers: 1A & 1B

Problem Solving Hints & Solutions

Skill Builders:

5.1 Adding large numbers without carry over using columns.

13.1 Using the commutativity property for addition.



J. B. Wright & I. Tutos

HOW TO USE MATHS MATE

- Students complete the **Maths Mate sheet**.
Parents sign the work.

The image shows two pages of the 'Maths Mate' worksheet. Page 1 (left) is titled 'Term 1 - Sheet 1' and contains various math problems:

- 1. Addition: $153 + 10792684$
- 2. Subtraction: $9116812351047 - 1$
- 3. Multiplication: 842×911735610
- 4. Division: $164 \div 243282036122840$
- 5. Large Number: $840 \div 10$
- 6. Fractions: $3 \times \frac{1}{8} =$
- 7. Percentages: Write 15 out of 100 as a percentage.
- 8. Decimals: $5.23 + 2.63$
- 9. Fractions: $\frac{7}{9} \times \frac{3}{9} =$
- 10. Fractions: $3 \times \frac{1}{8} =$
- 11. Percentages: Write 15 out of 100 as a percentage.
- 12. Decimals: What percentage of the shape is shaded?
- 13. Integers: Which location has the lowest altitude?
- 14. Ratios: Simplify the ratio 4:6
- 15. Indices: Write the power as a product: $2^2 =$
- 16. Order of Operations: $12 + 8 - 9 =$
- 17. Exploring Numbers: Which number is the largest?
- 18. Multiples: List all the multiples of 4 up to 20.
- 19. Number Patterns: Complete the pattern: 6, 13, 20, 27, 34, ...
- 20. Expressions: Simplify $y + y$
- 21. Substitution: If $y = 2$, find the value of $y + 6$
- 22. Equations: $4 + \square = 10$

Page 2 (right) contains:

- 23. Coordinates: Start at the origin. Move 4 units to the right along the x-axis and then up 6 units. Plot a point. What are the coordinates of the point?
- 24. Units of Measurement: 3 days = hours
- 25. Perimeter: Use a ruler to find the perimeter of the square in centimetres.
- 26. Area/Volume: Find the area of the rectangle.
- 27. Shapes: Use a protractor to measure this angle.
- 28. Location/Transformation: From the main gateway of the Taj Mahal you face the tomb. Is the Mosque on your left or right?
- 29. Statistics: How many players have won the golf Open Championship 5 times?
- 30. Probability: There are 12 white, 30 red and 18 blue Lego pieces in a box. What is the largest number of pieces you could draw from the box without taking a white piece?
- 31. Problem Solving 1: If it takes June five minutes to cut a log into two pieces, how long would it take her to cut a log into six pieces?
- 32. Problem Solving 2: Move one match to make this equation correct.
- 33. Problem Solving 3: Twelve students sit for an exam which has a maximum score of 100. The average of the twelve scores achieved by the students in the exam was 95. What is the minimum mark a student could have scored?

- Students correct their work in class. Students colour the boxes to record their correct answers.

- The student **record keeping sheets** are completed. Students can transfer their results directly from the worksheet to the results sheet.

- Students identify the appropriate Skill Builder as listed on the record keeping sheet.

The image shows a 'Maths Mate' record-keeping sheet for Paul Wright, Class 8B. It features a grid of boxes for recording scores for each question. The questions are numbered 1 to 33, corresponding to the problems on the worksheet. The grid shows scores for each question, with some boxes containing numbers like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33. The total correct score is 26 out of 33. The sheet also includes a 'Skill Builder' section with a grid of boxes for recording scores for each skill builder.

MATHS MATE



Name:

Class:

Teacher:

Worksheet Results

Term 1

| | | | | |
|----------------|----------------|----------------|----------------|---------------------|
| Sheet 1 | Sheet 2 | Sheet 3 | Sheet 4 | Skill Builder links |
|----------------|----------------|----------------|----------------|---------------------|

| | | | | |
|----------------|----------------|----------------|----------------|---------------------|
| Sheet 5 | Sheet 6 | Sheet 7 | Sheet 8 | Skill Builder links |
|----------------|----------------|----------------|----------------|---------------------|

| | |
|---------------------------------|-----------------------------------|
| NUMBER & ALGEBRA | 1. [+ Whole Numbers to 10] |
| | 2. [- Whole Numbers to 10] |
| | 3. [× Whole Numbers to 10] |
| | 4. [÷ Whole Numbers to 10] |
| | 5. [Large Number +] |
| | 6. [Large Number -] |
| | 7. [Powers of 10 ×, ÷] |
| | 8. [Large Number ×, ÷] |
| | 9. [Decimals] |
| | 10. [Fractions] |
| | 11. [Decimals / Fractions] |
| | 12. [Place Value] |
| | 13. [Operations] |
| | 14. [Exploring Numbers] |
| | 15. [Number Patterns / Equations] |
| MEASUREMENT & SPACE | 16. [Units of Measurement] |
| | 17. [Time] |
| | 18. [Measuring] |
| | 19. [Shapes] |
| 20. [Location / Transformation] | |
| S & P | 21. [Statistics / Probability] |
| PROBLEM SOLVING | 22. [Problem Solving 1] |
| | 23. [Problem Solving 2] |
| | 24. [Problem Solving 3] |
| Total Correct | |

| | | | | |
|---|----|----|----|-------------------|
| 1 | 1 | 1 | 1 | 1.1,2,3,4 |
| 2 | 2 | 2 | 2 | 2.1,2,3,4,5 |
| 3 | 3 | 3 | 3 | 3.3,4,5 |
| 4 | 4 | 4 | 4 | 4.1,2 |
| 5 | 5 | 5 | 5 | 5.1 |
| 6 | 6 | 6 | 6 | 6.1 |
| 7 | 7 | 7 | 7 | 7.1,2 |
| 8 | 8 | 8 | 8 | 8.1,2 |
| 9 | 9 | 9 | 9 | 9.2 |
| 10 | 10 | 10 | 10 | 10.1 |
| 11 | 11 | 11 | 11 | 11.3 |
| 12 | 12 | 12 | 12 | 12.1 |
| 13 | 13 | 13 | 13 | 13.1,2 |
| 14 | 14 | 14 | 14 | 14.1 |
| 15 | 15 | 15 | 15 | 15.1,3 |
| 16 | 16 | 16 | 16 | 16.1 |
| 17 | 17 | 17 | 17 | 17.1,2 |
| 18 | 18 | 18 | 18 | 18.1 |
| 19 | 19 | 19 | 19 | 19.2 |
| 20 | 20 | 20 | 20 | 20.11 |
| 21 | 21 | 21 | 21 | 21.2 |
| 22 | 22 | 22 | 22 | Hints & Solutions |
| 23 | 23 | 23 | 23 | Hints & Solutions |
| 24 | 24 | 24 | 24 | Hints & Solutions |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> | | | | |

| | | | | |
|---|----|----|----|-------------------|
| 1 | 1 | 1 | 1 | 1.1,2,3,4 |
| 2 | 2 | 2 | 2 | 2.1,2,3,4,5 |
| 3 | 3 | 3 | 3 | 3.1,2,3,4 |
| 4 | 4 | 4 | 4 | 4.1,2 |
| 5 | 5 | 5 | 5 | 5.1 |
| 6 | 6 | 6 | 6 | 6.1 |
| 7 | 7 | 7 | 7 | 7.3,4 |
| 8 | 8 | 8 | 8 | 8.4 |
| 9 | 9 | 9 | 9 | 9.4,6 |
| 10 | 10 | 10 | 10 | 10.6 |
| 11 | 11 | 11 | 11 | 11.4 |
| 12 | 12 | 12 | 12 | 12.2 |
| 13 | 13 | 13 | 13 | 13.3,4 |
| 14 | 14 | 14 | 14 | 14.3,4,9 |
| 15 | 15 | 15 | 15 | 15.2,4 |
| 16 | 16 | 16 | 16 | 16.2 |
| 17 | 17 | 17 | 17 | 17.3 |
| 18 | 18 | 18 | 18 | 18.2 |
| 19 | 19 | 19 | 19 | 19.3,4 |
| 20 | 20 | 20 | 20 | 20.9 |
| 21 | 21 | 21 | 21 | 21.3,4 |
| 22 | 22 | 22 | 22 | Hints & Solutions |
| 23 | 23 | 23 | 23 | Hints & Solutions |
| 24 | 24 | 24 | 24 | Hints & Solutions |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> | | | | |

MATHS MATE

Term 1 - Sheet 1



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|---|---|---|---|---|---|---|---|
| | 3 | 10 | 7 | 1 | 4 | 2 | 9 | 8 | 5 | 6 |
| + 3 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|---|---|----|---|----|
| | 7 | 14 | 15 | 13 | 11 | 9 | 8 | 12 | 6 | 10 |
| - 5 | | | | | | | | | | |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|----|---|---|---|---|---|
| | 4 | 1 | 3 | 9 | 10 | 5 | 8 | 2 | 6 | 7 |
| × 4 | | | | | | | | | | |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|----|---|---|---|---|---|---|---|
| | 2 | 9 | 10 | 8 | 6 | 4 | 3 | 7 | 1 | 5 |
| ÷ 1 | | | | | | | | | | |

DIVIDING BY 5

Here is an easy way to divide by 5:

Double the number and then divide by 10.

e.g. 1) $1230 \div 5 = 246$

$$1230 \times 2 = 2460$$

$$2460 \div 10 = 246$$

e.g. 2) $288 \div 5 = 57.6$

$$288 \times 2 = 576$$

$$576 \div 10 = 57.6$$

CHALLENGE:

You'll find this little Mate © on every sheet but one! The question is which one?

5. [Large Number +]

$$\begin{array}{r} 56 \\ + 23 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 243 \\ \times 2 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Complete the table.

| Decimal | Fraction |
|---------|----------------|
| | $\frac{6}{10}$ |

6. [Large Number -]

$$\begin{array}{r} 56 \\ - 23 \\ \hline \end{array}$$

9. [Decimals]

Write as a decimal:
nine tenths.

12. [Place Value]

Which digit in 8526 is in the same place as the 3 in 934?

13. [Operations]

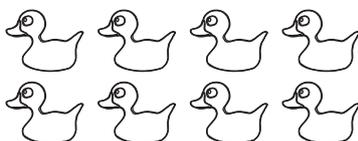
$$8 + \square = 11 + 8$$

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 26 \\ \times 10 \\ \hline \end{array}$$

10. [Fractions]

Shade in $\frac{3}{8}$ of this group of ducks.



14. [Exploring Numbers]

Write in numerals:
one thousand, two hundred and seven

15. [Number Patterns / Equations]

16, 13, 10, 7,

16. [Units of Measurement]

Choose the appropriate unit: grams, kilograms or tonnes.
"Ten oranges would weigh about 2..."

17. [Time]

Write the time in words.



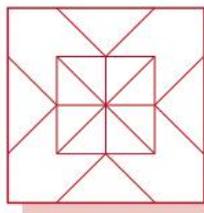
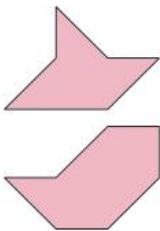
18. [Measuring]

Estimate the length of the pencil.



19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



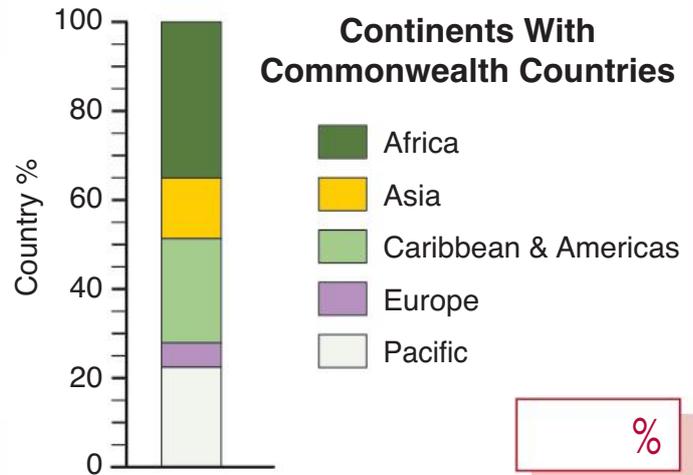
20. [Location / Transformation]

The shape has:
A) line symmetry
B) rotational symmetry
C) both line and rotational symmetry



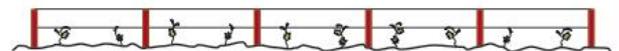
21. [Statistics / Probability]

There are 53 independent countries in the Commonwealth. What percentage of these countries are located in Africa?


 %

22. [Problem Solving 1] *

Ragan takes an hour to plant 2 vines between each of the 6 posts in the first row of his vineyard. How long will it take to plant 2 vines between each of the 9 posts in the longer second row?

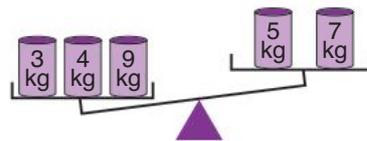


[Hint: 10 vines take one hour.]

 min

23. [Problem Solving 2] *

Which two weights need to be swapped to balance the scales?


 kg and kg

24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 2 \square 4 \\
 + \square 1 \square \\
 \hline
 9 \square 0
 \end{array}$$

MATHS MATE

Term 1 - Sheet 2



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|----|---|
| | 4 | 8 | 5 | 7 | 1 | 6 | 2 | 3 | 10 | 9 |
| + 6 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|---|----|----|
| | 18 | 13 | 12 | 16 | 11 | 14 | 17 | 9 | 15 | 10 |
| - 8 | | | | | | | | | | |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|---|---|---|---|---|---|---|---|
| | 9 | 10 | 4 | 5 | 2 | 3 | 7 | 6 | 8 | 1 |
| × 7 | | | | | | | | | | |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|----|
| | 6 | 42 | 36 | 18 | 24 | 48 | 30 | 60 | 54 | 12 |
| ÷ 6 | | | | | | | | | | |

MULTIPLYING BY 25

To multiply by 25 you can multiply by 100 and then divide by 4.

e.g. $32 \times 25 = 800$

$$\begin{aligned} 32 \times 100 &= 3200 \\ 3200 \div 4 &= 1600 \\ 1600 \div 2 &= 800 \end{aligned}$$

Try your skill:

$$\begin{aligned} 24 \times 25 \\ 444 \times 25 \\ 18 \times 25 \end{aligned}$$



Answers: 600, 11100, 450

5. [Large Number +]

$$\begin{array}{r} 257 \\ + 232 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 210 \\ \times 4 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Write $\frac{8}{100}$ as a decimal.

6. [Large Number -]

$$\begin{array}{r} 849 \\ - 333 \\ \hline \end{array}$$

9. [Decimals]
Write as a decimal:
two and eleven hundredths.

12. [Place Value]

In the number 4257 which of the digits 4, 2, 5 or 7 lies in the tens place?

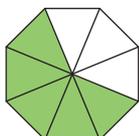
13. [Operations]

$$\square + 13 = 13 + 21$$

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 183 \\ \times 10 \\ \hline \end{array}$$

10. [Fractions]
What fraction of this octagon is shaded?



14. [Exploring Numbers]

Write in numerals:
three thousand, five hundred and forty

15. [Number Patterns / Equations]

2, 9, 16, 23, 30, _____, _____

16. [Units of Measurement]

Choose the appropriate unit: millimetres, centimetres or metres.
"The height of Keops Pyramid in Egypt is 137..."

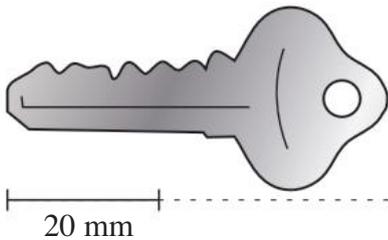
17. [Time]

Write the time in digital form.



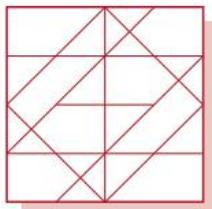
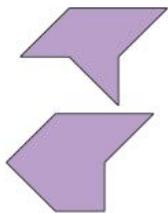
18. [Measuring]

Estimate the length of the key.



19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



20. [Location / Transformation]

The shape has:

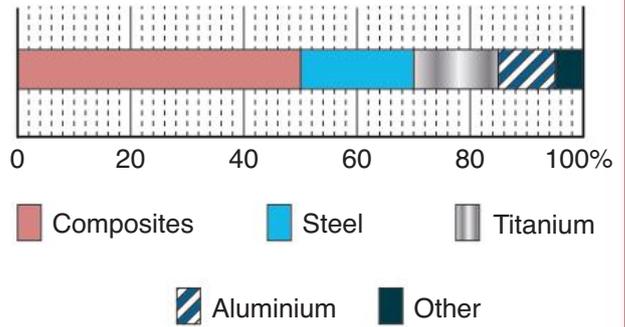
- A) line symmetry
- B) rotational symmetry
- C) both line and rotational symmetry



21. [Statistics / Probability]

What percentage of the composition of the 787 Dreamliner is steel?

Composition of the Boeing 787 Dreamliner

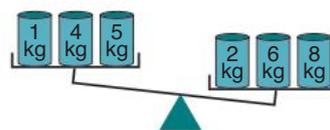


22. [Problem Solving 1] *

For hurdles races, the hurdles are placed 10 m apart. For example, a 60 m race has 5 hurdles. How many hurdles are required for a 100 m race?

23. [Problem Solving 2] *

Which two weights need to be swapped to balance the scales?



24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 1 \square 7 \\
 + 4 8 \square \\
 \hline
 \square \square 9
 \end{array}$$

MATHS MATE

Term 1 - Sheet 3



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|---|----|
| | 9 | 7 | 8 | 6 | 5 | 3 | 4 | 1 | 2 | 10 |
| + 10 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|---|---|----|----|---|---|----|---|
| | 11 | 6 | 8 | 5 | 12 | 13 | 4 | 9 | 10 | 7 |
| - 3 | | | | | | | | | | |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|---|---|---|---|---|---|---|---|
| | 10 | 6 | 4 | 5 | 2 | 1 | 7 | 3 | 8 | 9 |
| × 1 | | | | | | | | | | |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|---|----|
| | 80 | 32 | 56 | 64 | 40 | 72 | 48 | 16 | 8 | 24 |
| ÷ 8 | | | | | | | | | | |

MULTIPLYING BY 9

Here is an easy way to multiply a number by 9: Multiply by 10 instead, and then just subtract the original number.

e.g. $45 \times 9 = 405$

$45 \times 10 = 450$

$450 - 45 = 405$

Try your skill:

23×9

34×9

28×9



Answers: 207, 306, 252

5. [Large Number +]

$$\begin{array}{r} 7623 \\ + 1074 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 36 \\ \times 6 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Complete the table.

| Decimal | Fraction |
|---------|--------------------|
| | $\frac{748}{1000}$ |

6. [Large Number -]

$$\begin{array}{r} 976 \\ - 733 \\ \hline \end{array}$$

9. [Decimals]

Write as a decimal:
five and two tenths.

12. [Place Value]

In the number 24.38 which of the digits 2, 4, 3 or 8 lies in the hundredths place?

13. [Operations]

$\times 4 = 4 \times 15$

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 57 \\ \times 100 \\ \hline \end{array}$$

10. [Fractions]

Shade in $\frac{1}{3}$ of this parallelogram.



14. [Exploring Numbers]

Write in numerals:
nine thousand and ninety-nine

15. [Number Patterns / Equations]

9, 18, 27, 36, 45,

16. [Units of Measurement]

Choose the appropriate unit: millilitres, litres or kilolitres.
 "The capacity of the child's wading pool was about 450..."

17. [Time]

Write the time in digital form.



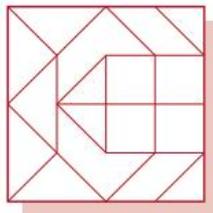
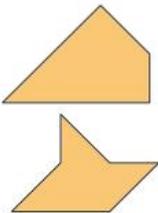
18. [Measuring]

Estimate the length of the paper clip.



19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
 [Same size and orientation.]



20. [Location / Transformation]

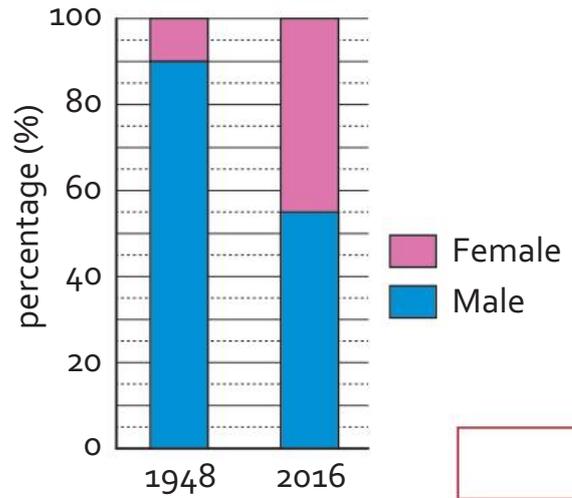
The shape has:
 A) line symmetry
 B) rotational symmetry
 C) both line and rotational symmetry



21. [Statistics / Probability]

What percentage of competitors at the 2016 Rio Olympics were female?

Gender of Olympic Competitors



22. [Problem Solving 1] *

If it takes Sarah twelve minutes to saw a pole into three pieces, how long would it take her to saw a pole into five pieces?

23. [Problem Solving 2] *

Use the diagrams to calculate the weight of one black sphere.



24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 20\ \square \\
 + \square\square5 \\
 \hline
 \square8\square
 \end{array}$$

MATHS MATE

Term 1 - Sheet 4



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|----|---|
| | 7 | 5 | 6 | 4 | 1 | 8 | 2 | 9 | 10 | 3 |
| + 8 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|---|----|----|----|----|----|----|---|
| | 13 | 11 | 9 | 14 | 15 | 16 | 17 | 12 | 10 | 8 |
| - 7 | | | | | | | | | | |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|----|---|
| | 7 | 5 | 6 | 4 | 1 | 8 | 2 | 9 | 10 | 3 |
| × 6 | | | | | | | | | | |

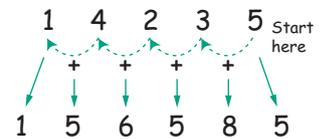
4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|---|----|----|----|
| | 56 | 21 | 35 | 14 | 63 | 70 | 7 | 42 | 49 | 28 |
| ÷ 7 | | | | | | | | | | |

MULTIPLYING BY 11

Find the answer to multiplications like $14\ 235 \times 11 = 156\ 585$ easily.

- ◆ Write down the right hand digit, in this case 5.
- ◆ Add the digits in pairs, starting from the right.
- ◆ To finish, write down the left hand digit, in this case 1.



Try your skill:

$$\begin{array}{r} 2345 \times 11 \\ 38234 \times 11 \end{array}$$

Answers: 25795, 420574

5. [Large Number +]

$$\begin{array}{r} 313 \\ 225 \\ 101 \\ + 20 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 94 \\ \times 9 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Write $\frac{3}{1000}$ as a decimal.

6. [Large Number -]

$$\begin{array}{r} 5182 \\ - 4041 \\ \hline \end{array}$$

9. [Decimals]

Write as a decimal:
sixty-three hundredths.

12. [Place Value]

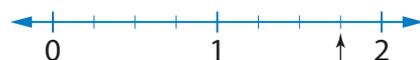
Which digit in 456.2 is in the same place as the 9 in 9.78?

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 65 \\ \times 1000 \\ \hline \end{array}$$

10. [Fractions]

Name the mixed number shown by the arrow on the number line.



13. [Operations]

$$10 \times 9 = \square \times 10$$

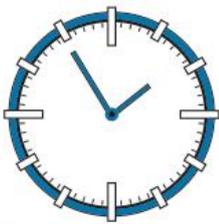
14. [Exploring Numbers]

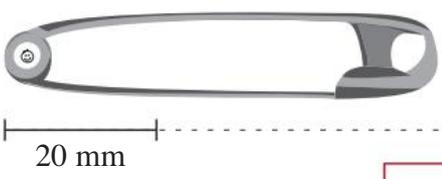
Write in numerals:
eight thousand and one

15. [Number Patterns / Equations]

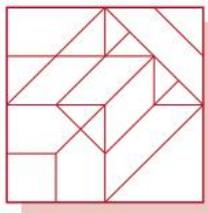
48, 40, 32, 24, _____, _____

16. [Units of Measurement]
 Choose the appropriate unit: centimetres, metres or kilometres.
 "The length of an Olympic swimming pool is 50..."

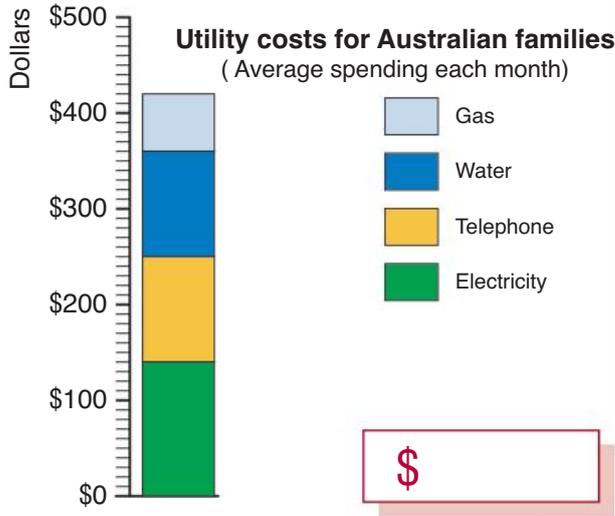
17. [Time]
 Write the time in words.


18. [Measuring]
 Estimate the length of the safety pin.


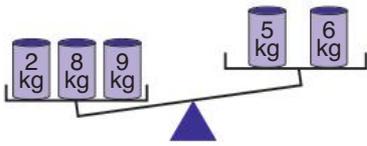
19. [Shapes]
 One of these shapes is hidden in the maze. Find it and colour it in.
 [Same size and orientation.]



20. [Location / Transformation]
 The shape has:
 A) line symmetry
 B) rotational symmetry
 C) both line and rotational symmetry


21. [Statistics / Probability]
 What is the combined average monthly cost of water and gas per family?


22. [Problem Solving 1] *
 Outside Kaitlan's front gate there is a power pole. Along the street there are many more poles all evenly spaced. Starting at the first pole Kaitlan takes 30 seconds to jog to pole three. At this rate, how long will it take her to reach pole six?

23. [Problem Solving 2] *
 Which two weights need to be swapped to balance the scales?


24. [Problem Solving 3]
 Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r} \square \square \square \\ + 807 \\ \hline \square 5 \square \end{array}$$



Name:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|---|---|---|---|---|---|---|---|
| | 9 | 10 | 4 | 5 | 2 | 3 | 7 | 6 | 8 | 1 |
| + 8 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|----|
| | 9 | 15 | 14 | 11 | 12 | 16 | 13 | 18 | 17 | 10 |
| - 7 | | | | | | | | | | |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|---|---|----|---|---|---|
| | 3 | 6 | 9 | 1 | 7 | 2 | 10 | 5 | 4 | 8 |
| × 7 | | | | | | | | | | |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|----|----|----|
| | 24 | 6 | 42 | 54 | 12 | 18 | 60 | 30 | 36 | 48 |
| ÷ 6 | | | | | | | | | | |

5. [Large Number +]

$$\begin{array}{r} 4523 \\ + 1034 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 87 \\ \times 3 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Write $\frac{9}{100}$ as a decimal.

6. [Large Number -]

$$\begin{array}{r} 748 \\ - 222 \\ \hline \end{array}$$

9. [Decimals]
Write as a decimal:
three and forty-one hundredths.

12. [Place Value]

Which digit in 345.1 is in the same place as the 8 in 6.87?

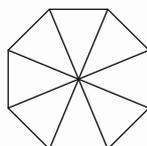
13. [Operations]

$$5 \times 17 = \square \times 5$$

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 71 \\ \times 100 \\ \hline \end{array}$$

10. [Fractions]
Shade in $\frac{1}{4}$ of this octagon.

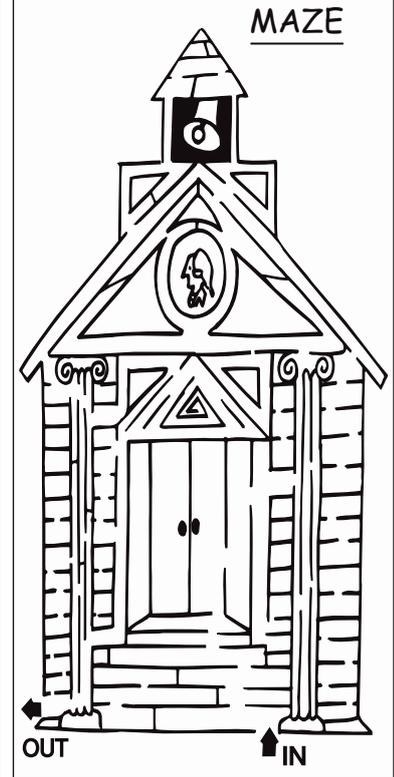


14. [Exploring Numbers]

Write in numerals:
five thousand and fifty-five

15. [Number Patterns / Equations]

27, 36, 45, 54, 63, ,



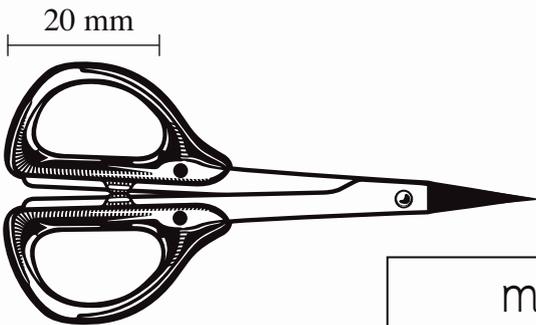
MAZE

16. [Units of Measurement]
Choose the appropriate units: millimetres, metres or kilometres.
"The tallest mountain in Europe is Mont Blanc with a height of 4807..."

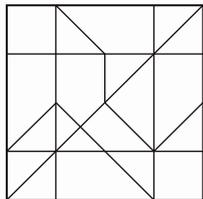
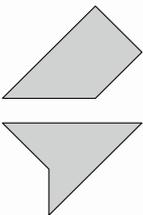
17. [Time]
Write the time in words.



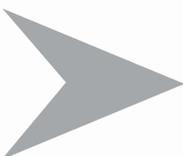
18. [Measuring]
Estimate the length of the scissors.



19. [Shapes]
One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]

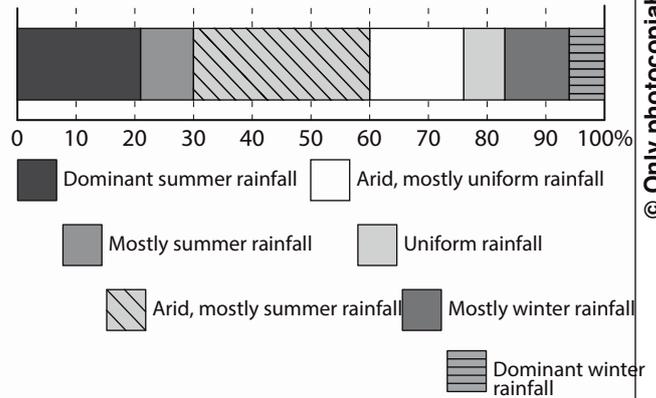


20. [Location / Transformation]
The shape has:
A) line symmetry
B) rotational symmetry
C) both line and rotational symmetry



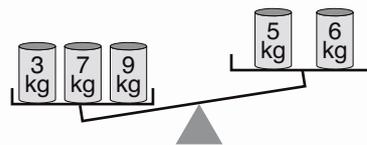
21. [Statistics / Probability]
Which climatic zone covers more than the dominant summer rainfall zone?

Australian Climatic Zones according to rainfall



22. [Problem Solving 1]
If it takes Nadira six minutes to saw a log into two pieces, how long would it take her to cut a log into three pieces?

23. [Problem Solving 2]
Which two weights need to be swapped to balance the scales?



24. [Problem Solving 3]
Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r} 7 \square 6 \\ + \square 1 \square \\ \hline 9 \square 0 \end{array}$$



Name:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|---|---|---|----|---|---|---|---|
| | 7 | 2 | 8 | 9 | 6 | 10 | 4 | 1 | 3 | 5 |
| + 6 | | | | | | | | | | |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|
| | 17 | 14 | 10 | 19 | 18 | 16 | 12 | 13 | 11 | 15 |
| - 5 | | | | | | | | | | |

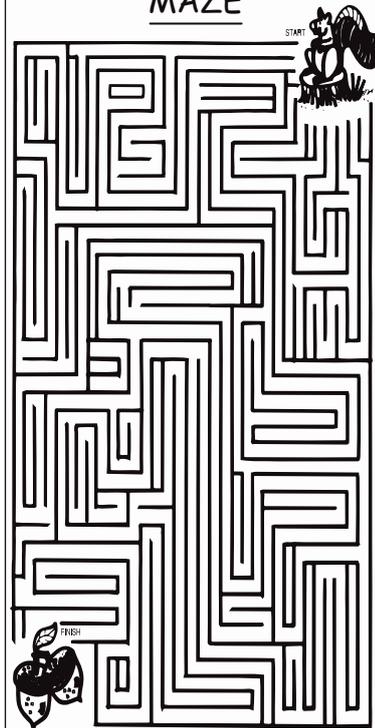
3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|---|---|---|---|---|---|---|---|
| | 10 | 6 | 4 | 5 | 2 | 1 | 7 | 3 | 8 | 9 |
| × 4 | | | | | | | | | | |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|---|----|----|----|----|----|----|----|
| | 35 | 14 | 7 | 70 | 21 | 49 | 42 | 28 | 63 | 56 |
| ÷ 7 | | | | | | | | | | |

MAZE



5. [Large Number +]

$$\begin{array}{r} 4823 \\ + 1054 \\ \hline \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 75 \\ \times 8 \\ \hline \end{array}$$

11. [Decimals / Fractions]

Write $\frac{52}{100}$ as a decimal.

6. [Large Number -]

$$\begin{array}{r} 964 \\ - 423 \\ \hline \end{array}$$

9. [Decimals]
Write as a decimal:
two and seventy-eight hundredths.

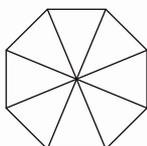
12. [Place Value]

Which digit in 291.3 is in the same place as the 5 in 9.54?

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 49 \\ \times 1000 \\ \hline \end{array}$$

10. [Fractions]
Shade in $\frac{1}{2}$ of this octagon.



13. [Operations]

$$\square \times 2 = 2 \times 14$$

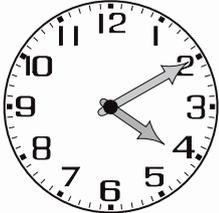
14. [Exploring Numbers]

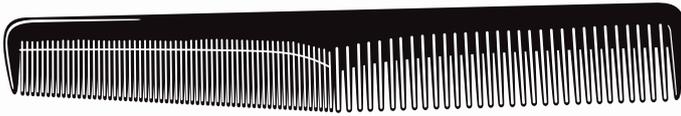
Write in numerals:
two thousand and twenty-two

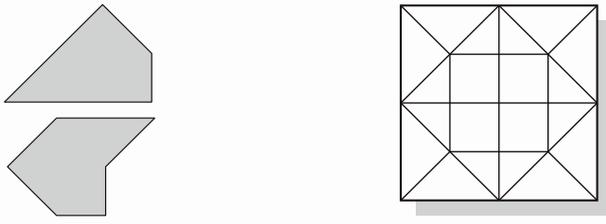
15. [Number Patterns / Equations]

58, 50, 42, 34, 26, _____, _____

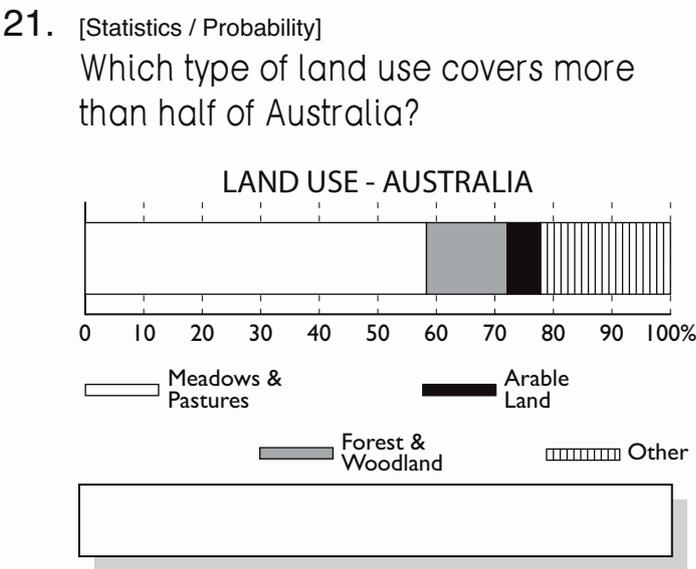
16. [Units of Measurement]
 Choose the appropriate units: millilitres, litres or megalitres.
 "The capacity of one regular can of soft drink is 330..."

17. [Time]
 Write the time in words.


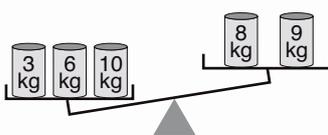
18. [Measuring]
 Estimate the length of the comb.

 mm

19. [Shapes]
 One of these shapes is hidden in the maze. Find it and colour it in.
 [Same size and orientation.]


20. [Location / Transformation]
 The shape has:
 A) line symmetry
 B) rotational symmetry
 C) both line and rotational symmetry

22. [Problem Solving 1]
 Juliet takes an hour to plant a creeper between each of the 3 fence posts on the left of her driveway.
 How long will it take to plant creepers between the 5 posts on the other side of the driveway?
 min

23. [Problem Solving 2]
 Which two weights need to be swapped to balance the scales?

 kg and kg

24. [Problem Solving 3]
 Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 \square 0 \square \\
 + 1 \square 4 \\
 \hline
 \square 8 \square
 \end{array}$$

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MATHS MATE

Term 1 - Sheet 1



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|---|---|---|----|----|---|---|
| | 3 | 10 | 7 | 1 | 4 | 2 | 9 | 8 | 5 | 6 |
| + 3 | 6 | 13 | 10 | 4 | 7 | 5 | 12 | 11 | 8 | 9 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|---|---|----|---|----|
| | 7 | 14 | 15 | 13 | 11 | 9 | 8 | 12 | 6 | 10 |
| - 5 | 2 | 9 | 10 | 8 | 6 | 4 | 3 | 7 | 1 | 5 |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|---|----|----|
| | 4 | 1 | 3 | 9 | 10 | 5 | 8 | 2 | 6 | 7 |
| × 4 | 16 | 4 | 12 | 36 | 40 | 20 | 32 | 8 | 24 | 28 |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|---|----|---|---|---|---|---|---|---|
| | 2 | 9 | 10 | 8 | 6 | 4 | 3 | 7 | 1 | 5 |
| ÷ 1 | 2 | 9 | 10 | 8 | 6 | 4 | 3 | 7 | 1 | 5 |

DIVIDING BY 5

Here is an easy way to divide by 5:

Double the number and then divide by 10.

e.g. 1) $1230 \div 5 = 246$

$$1230 \times 2 = 2460$$

$$2460 \div 10 = 246$$

e.g. 2) $288 \div 5 = 57.6$

$$288 \times 2 = 576$$

$$576 \div 10 = 57.6$$

CHALLENGE:

You'll find this little Mate © on every sheet but one! The question is which one?

Answer: Sheet 3.6

5. [Large Number +]

$$\begin{array}{r} 56 \\ + 23 \\ \hline 79 \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 243 \\ \times 2 \\ \hline 486 \end{array}$$

11. [Decimals / Fractions]

Complete the table.

| Decimal | Fraction |
|---------|----------------|
| 0.6 | $\frac{6}{10}$ |

6. [Large Number -]

$$\begin{array}{r} 56 \\ - 23 \\ \hline 33 \end{array}$$

9. [Decimals]

Write as a decimal:
nine tenths.

0.9

12. [Place Value]

Which digit in 8526 is in the same place as the 3 in 934?

2

13. [Operations]

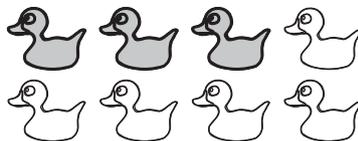
$$8 + 11 = 11 + 8$$

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 26 \\ \times 10 \\ \hline 260 \end{array}$$

10. [Fractions]

Shade in $\frac{3}{8}$ of this group of ducks.



[any 3 ducks]

14. [Exploring Numbers]

Write in numerals:
one thousand, two hundred and seven

1207

15. [Number Patterns / Equations]

16, 13, 10, 7, 4, 1

16. [Units of Measurement]

Choose the appropriate unit: grams, kilograms or tonnes.
"Ten oranges would weigh about 2..."

kilograms

17. [Time]

Write the time in words.



OR seven forty-five

a quarter to eight

18. [Measuring]

Estimate the length of the pencil.

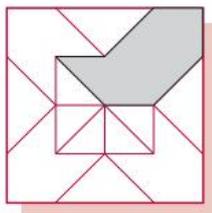
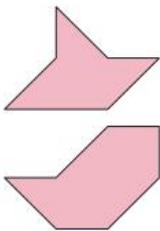


20 mm

Accept 75 to 85 → **80 mm**

19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



20. [Location / Transformation]

The shape has:

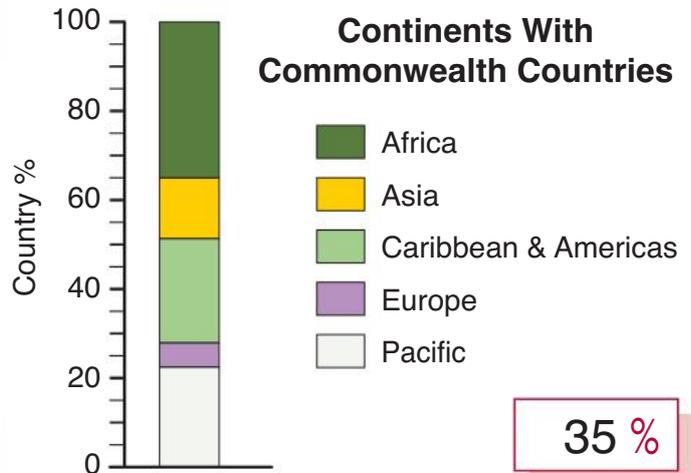
- A) line symmetry
- B) rotational symmetry
- C) both line and rotational symmetry



B

21. [Statistics / Probability]

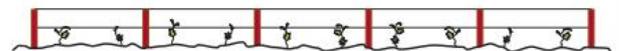
There are 53 independent countries in the Commonwealth. What percentage of these countries are located in Africa?



35 %

22. [Problem Solving 1] *

Ragan takes an hour to plant 2 vines between each of the 6 posts in the first row of his vineyard. How long will it take to plant 2 vines between each of the 9 posts in the longer second row?

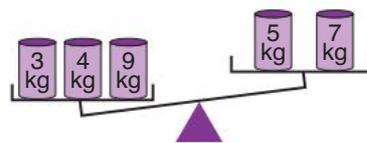


[Hint: 10 vines take one hour.]

96 min

23. [Problem Solving 2] *

Which two weights need to be swapped to balance the scales?



9 kg and 7 kg

24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 2 \ \boxed{3} \ 4 \\
 + \ \boxed{7} \ 1 \ \boxed{6} \\
 \hline
 9 \ \boxed{5} \ 0
 \end{array}$$

MATHS MATE

Term 1 - Sheet 2



Name:

Due Date: / /

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|---|----|---|---|----|----|
| | 4 | 8 | 5 | 7 | 1 | 6 | 2 | 3 | 10 | 9 |
| + 6 | 10 | 14 | 11 | 13 | 7 | 12 | 8 | 9 | 16 | 15 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|---|----|----|
| | 18 | 13 | 12 | 16 | 11 | 14 | 17 | 9 | 15 | 10 |
| - 8 | 10 | 5 | 4 | 8 | 3 | 6 | 9 | 1 | 7 | 2 |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|---|
| | 9 | 10 | 4 | 5 | 2 | 3 | 7 | 6 | 8 | 1 |
| × 7 | 63 | 70 | 28 | 35 | 14 | 21 | 49 | 42 | 56 | 7 |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|----|
| | 6 | 42 | 36 | 18 | 24 | 48 | 30 | 60 | 54 | 12 |
| ÷ 6 | 1 | 7 | 6 | 3 | 4 | 8 | 5 | 10 | 9 | 2 |

MULTIPLYING BY 25

To multiply by 25 you can multiply by 100 and then divide by 4.

e.g. $32 \times 25 = 800$

$$\begin{aligned}
 32 \times 100 &= 3200 \\
 3200 \div 4 &= 1600 \\
 1600 \div 2 &= 800
 \end{aligned}$$

Try your skill:

$$\begin{aligned}
 24 \times 25 \\
 444 \times 25 \\
 18 \times 25
 \end{aligned}$$



Answers: 600, 11100, 450

5. [Large Number +]

$$\begin{array}{r}
 257 \\
 + 232 \\
 \hline
 489
 \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r}
 210 \\
 \times 4 \\
 \hline
 840
 \end{array}$$

11. [Decimals / Fractions]

Write $\frac{8}{100}$ as a decimal.

0.08

6. [Large Number -]

$$\begin{array}{r}
 849 \\
 - 333 \\
 \hline
 516
 \end{array}$$

9. [Decimals]
Write as a decimal:
two and eleven hundredths.

2.11

12. [Place Value]

In the number 4257 which of the digits 4, 2, 5 or 7 lies in the tens place?

5

7. [Powers of 10 ×, ÷]

$$\begin{array}{r}
 183 \\
 \times 10 \\
 \hline
 1830
 \end{array}$$

10. [Fractions]
What fraction of this octagon is shaded?



$\frac{5}{8}$

13. [Operations]

$$21 + 13 = 13 + 21$$

14. [Exploring Numbers]

Write in numerals:
three thousand, five hundred and forty

3540

15. [Number Patterns / Equations]

$$2, 9, 16, 23, 30, \underline{37}, \underline{44}$$

16. [Units of Measurement]

Choose the appropriate unit: millimetres, centimetres or metres.
"The height of Keops Pyramid in Egypt is 137..."

metres

17. [Time]

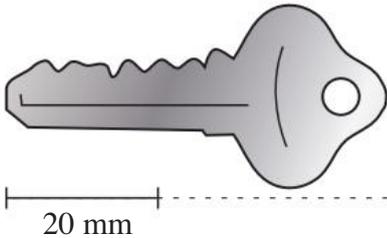
Write the time in digital form.



7 : 05

18. [Measuring]

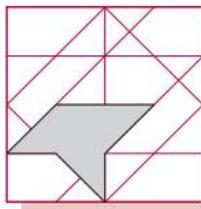
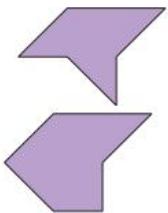
Estimate the length of the key.



Accept 45 to 55 → **50 mm**

19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



20. [Location / Transformation]

The shape has:

- A) line symmetry
- B) rotational symmetry
- C) both line and rotational symmetry

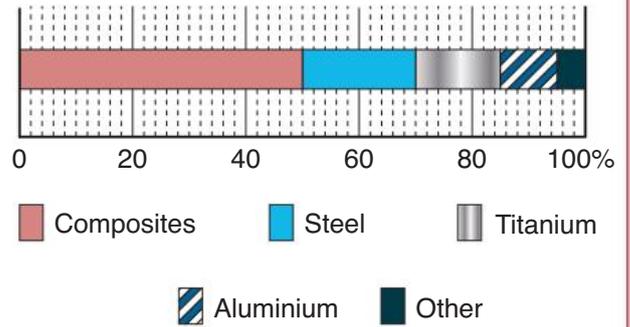


A

21. [Statistics / Probability]

What percentage of the composition of the 787 Dreamliner is steel?

Composition of the Boeing 787 Dreamliner



20%

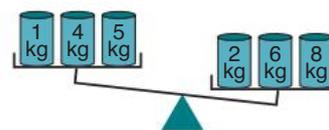
22. [Problem Solving 1] *

For hurdles races, the hurdles are placed 10 m apart. For example, a 60 m race has 5 hurdles. How many hurdles are required for a 100 m race?

9

23. [Problem Solving 2] *

Which two weights need to be swapped to balance the scales?



5 kg and 8 kg

24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 1 \ \boxed{5} \ 7 \\
 + \ 4 \ 8 \ \boxed{2} \\
 \hline
 \boxed{6} \ \boxed{3} \ 9
 \end{array}$$

MATHS MATE

Term 1 - Sheet 3



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|
| | 9 | 7 | 8 | 6 | 5 | 3 | 4 | 1 | 2 | 10 |
| + 10 | 19 | 17 | 18 | 16 | 15 | 13 | 14 | 11 | 12 | 20 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|---|---|----|----|---|---|----|---|
| | 11 | 6 | 8 | 5 | 12 | 13 | 4 | 9 | 10 | 7 |
| - 3 | 8 | 3 | 5 | 2 | 9 | 10 | 1 | 6 | 7 | 4 |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|---|---|---|---|---|---|---|---|
| | 10 | 6 | 4 | 5 | 2 | 1 | 7 | 3 | 8 | 9 |
| × 1 | 10 | 6 | 4 | 5 | 2 | 1 | 7 | 3 | 8 | 9 |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|---|----|
| | 80 | 32 | 56 | 64 | 40 | 72 | 48 | 16 | 8 | 24 |
| ÷ 8 | 10 | 4 | 7 | 8 | 5 | 9 | 6 | 2 | 1 | 3 |

MULTIPLYING BY 9

Here is an easy way to multiply a number by 9: Multiply by 10 instead, and then just subtract the original number.

e.g. $45 \times 9 = 405$

$45 \times 10 = 450$

$450 - 45 = 405$

Try your skill:

23×9

34×9

28×9



Answers: 207, 306, 252

5. [Large Number +]

$$\begin{array}{r} 7623 \\ + 1074 \\ \hline 8697 \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 36 \\ \times 6 \\ \hline 216 \end{array}$$

11. [Decimals / Fractions]

Complete the table.

| Decimal | Fraction |
|---------|--------------------|
| 0.748 | $\frac{748}{1000}$ |

6. [Large Number -]

$$\begin{array}{r} 976 \\ - 733 \\ \hline 243 \end{array}$$

9. [Decimals]

Write as a decimal: five and two tenths.

5.2

12. [Place Value]

In the number 24.38 which of the digits 2, 4, 3 or 8 lies in the hundredths place?

8

13. [Operations]

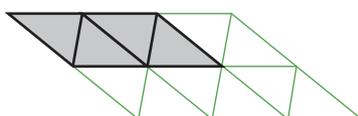
15 × 4 = 4 × 15

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 57 \\ \times 100 \\ \hline 5700 \end{array}$$

10. [Fractions]

Shade in $\frac{1}{3}$ of this parallelogram.



[any 4 small triangles]

14. [Exploring Numbers]

Write in numerals: nine thousand and ninety-nine

9099

15. [Number Patterns / Equations]

9, 18, 27, 36, 45,

54, 63

16. [Units of Measurement]

Choose the appropriate unit: millilitres, litres or kilolitres.
 "The capacity of the child's wading pool was about 450..."

litres

17. [Time]

Write the time in digital form.



3 : 22

18. [Measuring]

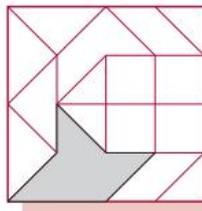
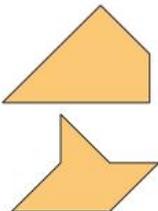
Estimate the length of the paper clip.



Accept 38 to 42 → 40 mm

19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
 [Same size and orientation.]



20. [Location / Transformation]

The shape has:
 A) line symmetry
 B) rotational symmetry
 C) both line and rotational symmetry

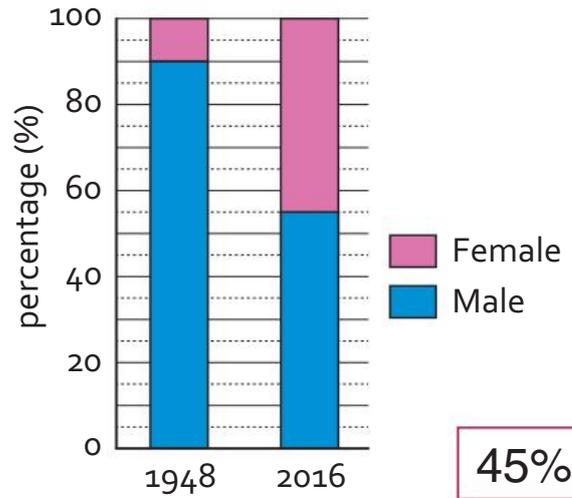


C

21. [Statistics / Probability]

What percentage of competitors at the 2016 Rio Olympics were female?

Gender of Olympic Competitors



45%

22. [Problem Solving 1] *

If it takes Sarah twelve minutes to saw a pole into three pieces, how long would it take her to saw a pole into five pieces?

24 min

23. [Problem Solving 2] *

Use the diagrams to calculate the weight of one black sphere.



2 kg

24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 20\boxed{9} \\
 + \boxed{1}\boxed{7}5 \\
 \hline
 \boxed{3}8\boxed{4}
 \end{array}$$

MATHS MATE

Term 1 - Sheet 4



Name:

Due Date:/...../.....

Parent's Signature:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|---|----|----|----|----|----|
| | 7 | 5 | 6 | 4 | 1 | 8 | 2 | 9 | 10 | 3 |
| + 8 | 15 | 13 | 14 | 12 | 9 | 16 | 10 | 17 | 18 | 11 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|---|----|----|----|----|----|----|---|
| | 13 | 11 | 9 | 14 | 15 | 16 | 17 | 12 | 10 | 8 |
| - 7 | 6 | 4 | 2 | 7 | 8 | 9 | 10 | 5 | 3 | 1 |

3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|---|----|----|----|----|----|
| | 7 | 5 | 6 | 4 | 1 | 8 | 2 | 9 | 10 | 3 |
| × 6 | 42 | 30 | 36 | 24 | 6 | 48 | 12 | 54 | 60 | 18 |

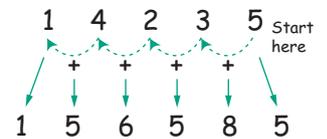
4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|---|----|----|----|
| | 56 | 21 | 35 | 14 | 63 | 70 | 7 | 42 | 49 | 28 |
| ÷ 7 | 8 | 3 | 5 | 2 | 9 | 10 | 1 | 6 | 7 | 4 |

MULTIPLYING BY 11

Find the answer to multiplications like $14\ 235 \times 11 = 156\ 585$ easily.

- ◆ Write down the right hand digit, in this case 5.
- ◆ Add the digits in pairs, starting from the right.
- ◆ To finish, write down the left hand digit, in this case 1.



Try your skill:

$$\begin{array}{r} 2345 \times 11 \\ 38234 \times 11 \end{array}$$

Answers: 25795, 420574

5. [Large Number +]

$$\begin{array}{r} 313 \\ 225 \\ 101 \\ + 20 \\ \hline \end{array}$$

659

8. [Large Number ×, ÷]

$$\begin{array}{r} 94 \\ \times 9 \\ \hline \end{array}$$

846

11. [Decimals / Fractions]

Write $\frac{3}{1000}$ as a decimal.

0.003

6. [Large Number -]

$$\begin{array}{r} 5182 \\ - 4041 \\ \hline \end{array}$$

1141

9. [Decimals]
Write as a decimal:
sixty-three hundredths.

0.63

12. [Place Value]

Which digit in 456.2 is in the same place as the 9 in 9.78?

6

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 65 \\ \times 1000 \\ \hline \end{array}$$

65000

10. [Fractions]
Name the mixed number shown by the arrow on the number line.



$1\frac{3}{4}$

13. [Operations]

$$10 \times 9 = \mathbf{9} \times 10$$

14. [Exploring Numbers]

Write in numerals:
eight thousand and one

8001

15. [Number Patterns / Equations]

$$48, 40, 32, 24, \mathbf{16}, \mathbf{8}$$

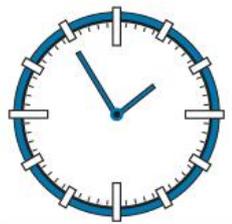
16. [Units of Measurement]

Choose the appropriate unit: centimetres, metres or kilometres.
"The length of an Olympic swimming pool is 50..."

metres

17. [Time]

Write the time in words.

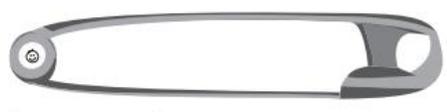


OR one fifty-five

five to two

18. [Measuring]

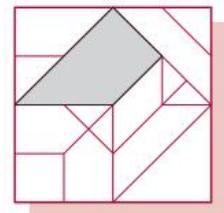
Estimate the length of the safety pin.



Accept 54 to 60 → 57 mm

19. [Shapes]

One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



20. [Location / Transformation]

The shape has:

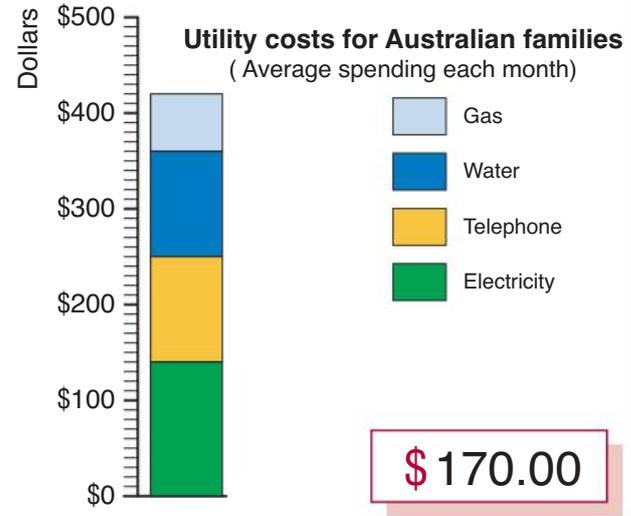
- A) line symmetry
- B) rotational symmetry
- C) both line and rotational symmetry



B

21. [Statistics / Probability]

What is the combined average monthly cost of water and gas per family?



\$ 170.00

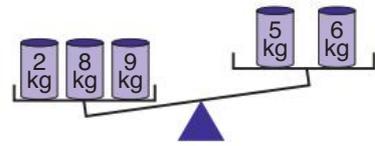
22. [Problem Solving 1] *

Outside Kaitlan's front gate there is a power pole. Along the street there are many more poles all evenly spaced. Starting at the first pole Kaitlan takes 30 seconds to jog to pole three. At this rate, how long will it take her to reach pole six?

75 s

23. [Problem Solving 2] *

Which two weights need to be swapped to balance the scales?



9 kg and 5 kg

24. [Problem Solving 3]

Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 \boxed{1} \boxed{4} \boxed{6} \\
 + \quad 8 \quad 0 \quad 7 \\
 \hline
 \boxed{9} \boxed{5} \boxed{3}
 \end{array}$$



Name:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|---|
| | 9 | 10 | 4 | 5 | 2 | 3 | 7 | 6 | 8 | 1 |
| + 8 | 17 | 18 | 12 | 13 | 10 | 11 | 15 | 14 | 16 | 9 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|----|
| | 9 | 15 | 14 | 11 | 12 | 16 | 13 | 18 | 17 | 10 |
| - 7 | 2 | 8 | 7 | 4 | 5 | 9 | 6 | 11 | 10 | 3 |

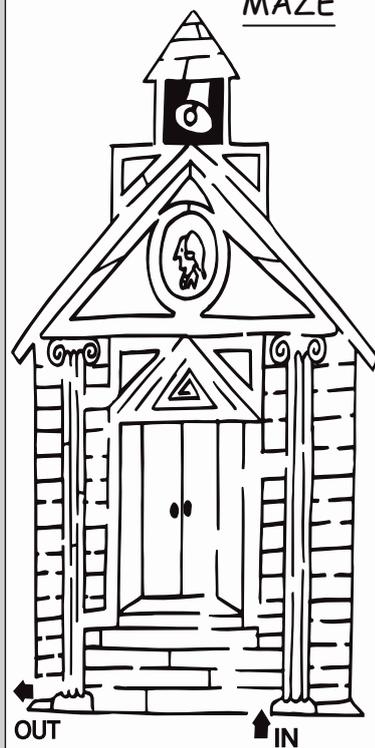
3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|---|----|----|----|----|----|----|
| | 3 | 6 | 9 | 1 | 7 | 2 | 10 | 5 | 4 | 8 |
| × 7 | 21 | 42 | 63 | 7 | 49 | 14 | 70 | 35 | 28 | 56 |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|----|----|----|
| | 24 | 6 | 42 | 54 | 12 | 18 | 60 | 30 | 36 | 48 |
| ÷ 6 | 4 | 1 | 7 | 9 | 2 | 3 | 10 | 5 | 6 | 8 |

MAZE



5. [Large Number +]

$$\begin{array}{r} 4523 \\ + 1034 \\ \hline 5557 \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 87 \\ \times 3 \\ \hline 261 \end{array}$$

11. [Decimals / Fractions]

Write $\frac{9}{100}$ as a decimal.

0.09

6. [Large Number -]

$$\begin{array}{r} 748 \\ - 222 \\ \hline 526 \end{array}$$

9. [Decimals]
Write as a decimal:
three and forty-one hundredths.

3.41

12. [Place Value]

Which digit in 345.1 is in the same place as the 8 in 6.87?

1

13. [Operations]

$$5 \times 17 = 17 \times 5$$

14. [Exploring Numbers]

Write in numerals:
five thousand and fifty-five

5055

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 71 \\ \times 100 \\ \hline 7100 \end{array}$$

10. [Fractions]
Shade in $\frac{1}{4}$ of this octagon.



[any 2 small triangles]

15. [Number Patterns / Equations]

27, 36, 45, 54, 63, 72, 81

16. [Units of Measurement]
Choose the appropriate units: millimetres, metres or kilometres.
"The tallest mountain in Europe is Mont Blanc with a height of 4807..."

metres

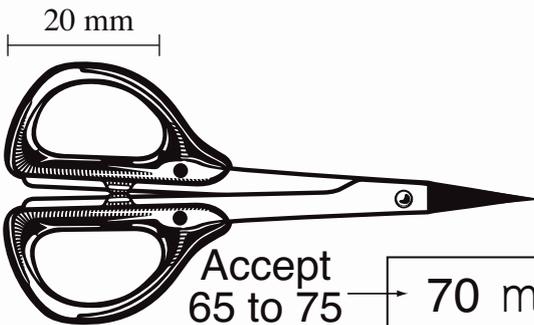
17. [Time]
Write the time in words.



OR one twenty-five

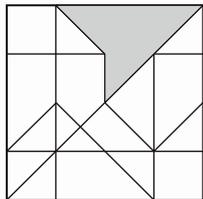
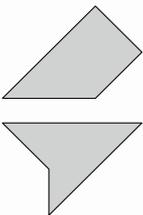
twenty-five past one

18. [Measuring]
Estimate the length of the scissors.

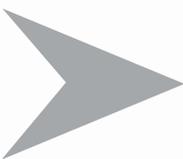


70 mm

19. [Shapes]
One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



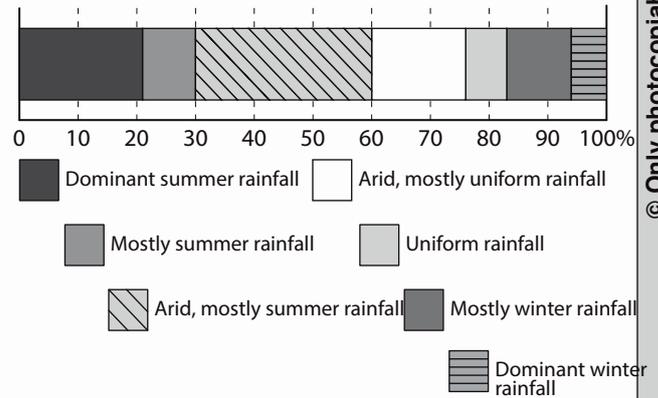
20. [Location / Transformation]
The shape has:
A) line symmetry
B) rotational symmetry
C) both line and rotational symmetry



A

21. [Statistics / Probability]
Which climatic zone covers more than the dominant summer rainfall zone?

Australian Climatic Zones according to rainfall

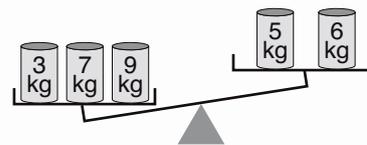


arid, mostly summer rainfall

22. [Problem Solving 1]
If it takes Nadira six minutes to saw a log into two pieces, how long would it take her to cut a log into three pieces?

12 min

23. [Problem Solving 2]
Which two weights need to be swapped to balance the scales?



9 kg and 5 kg

24. [Problem Solving 3]
Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r} 7 \boxed{3} 6 \\ + \boxed{2} 1 \boxed{4} \\ \hline 9 \boxed{5} 0 \end{array}$$



Name:

1. [+ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|---|---|----|
| | 7 | 2 | 8 | 9 | 6 | 10 | 4 | 1 | 3 | 5 |
| + 6 | 13 | 8 | 14 | 15 | 12 | 16 | 10 | 7 | 9 | 11 |

2. [- Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|
| | 17 | 14 | 10 | 19 | 18 | 16 | 12 | 13 | 11 | 15 |
| - 5 | 12 | 9 | 5 | 14 | 13 | 11 | 7 | 8 | 6 | 10 |

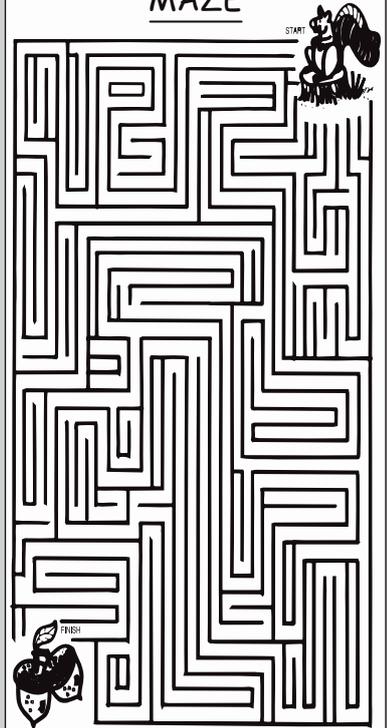
3. [× Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|----|----|---|---|----|----|----|----|
| | 10 | 6 | 4 | 5 | 2 | 1 | 7 | 3 | 8 | 9 |
| × 4 | 40 | 24 | 16 | 20 | 8 | 4 | 28 | 12 | 32 | 36 |

4. [÷ Whole Numbers to 10]

| | | | | | | | | | | |
|-----|----|----|---|----|----|----|----|----|----|----|
| | 35 | 14 | 7 | 70 | 21 | 49 | 42 | 28 | 63 | 56 |
| ÷ 7 | 5 | 2 | 1 | 10 | 3 | 7 | 6 | 4 | 9 | 8 |

MAZE



5. [Large Number +]

$$\begin{array}{r} 4823 \\ + 1054 \\ \hline 5877 \end{array}$$

8. [Large Number ×, ÷]

$$\begin{array}{r} 75 \\ \times 8 \\ \hline 600 \end{array}$$

11. [Decimals / Fractions]

Write $\frac{52}{100}$ as a decimal.

0.52

6. [Large Number -]

$$\begin{array}{r} 964 \\ - 423 \\ \hline 541 \end{array}$$

9. [Decimals]

Write as a decimal:
two and seventy-eight hundredths.

2.78

12. [Place Value]

Which digit in 291.3 is in the same place as the 5 in 9.54?

3

7. [Powers of 10 ×, ÷]

$$\begin{array}{r} 49 \\ \times 1000 \\ \hline 49000 \end{array}$$

10. [Fractions]

Shade in $\frac{1}{2}$ of this octagon.



[any 4 small triangles]

13. [Operations]

$$14 \times 2 = 2 \times 14$$

14. [Exploring Numbers]

Write in numerals:
two thousand and twenty-two

2022

15. [Number Patterns / Equations]

58, 50, 42, 34, 26,

18, 10

16. [Units of Measurement]
Choose the appropriate units: millilitres, litres or megalitres.
"The capacity of one regular can of soft drink is 330..."

millilitres

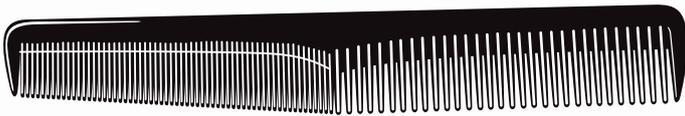
17. [Time]
Write the time in words.



OR four ten

ten past four

18. [Measuring]
Estimate the length of the comb.

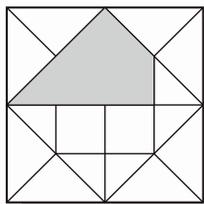
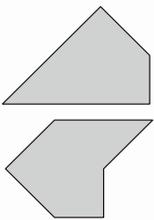


20 mm

Accept
85 to 95

90 mm

19. [Shapes]
One of these shapes is hidden in the maze. Find it and colour it in.
[Same size and orientation.]



20. [Location / Transformation]

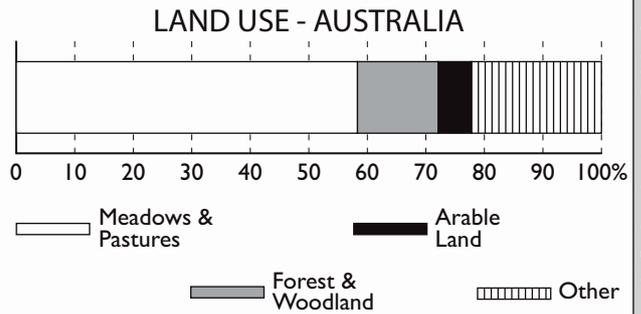
The shape has:

- A) line symmetry
- B) rotational symmetry
- C) both line and rotational symmetry



B

21. [Statistics / Probability]
Which type of land use covers more than half of Australia?

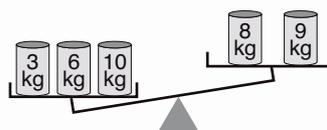


meadows & pastures

22. [Problem Solving 1]
Juliet takes an hour to plant a creeper between each of the 3 fence posts on the left of her driveway.
How long will it take to plant creepers between the 5 posts on the other side of the driveway?

120 min

23. [Problem Solving 2]
Which two weights need to be swapped to balance the scales?



10 kg and 9 kg

24. [Problem Solving 3]
Fill in the missing digits, given that no digit is repeated.

$$\begin{array}{r}
 \boxed{5} \boxed{0} \boxed{9} \\
 + \boxed{1} \boxed{7} \boxed{4} \\
 \hline
 \boxed{6} \boxed{8} \boxed{3}
 \end{array}$$

1.1

- 22. Hint:** Draw a diagram. Consider the number of spaces between posts, rather than the number of posts. Find how long to plant one vine. Use minutes.

Solution:



In the first row there are 6 posts leaving 5 spaces between each post. Each space had 2 vines.

$$5 \times 2 = 10 \text{ vines.}$$

10 vines take 1 hour or 60 minutes to plant.

So 1 vine will take one tenth of that, or 6 minutes to plant.



In the second row there are 9 posts leaving 8 spaces. Each space had 2 vines.

$$8 \times 2 = 16 \text{ vines.}$$

$$16 \text{ vines} \times 6 \text{ minutes} = 96 \text{ minutes.}$$

It will take Ragan 96 minutes to plant vines between the 9 posts in the second row.

- 23. Hint:** Add all weights on the scale. Halve the sum to find what each side should weigh.

Solution: Side A) weighs $3 + 4 + 9 = 16$ kg

Side B) weighs $5 + 7 = 12$ kg

Together the sides weigh $12 + 16 = 28$ kg

For both sides to be in balance they should each weigh half of this or 14 kg.

The weights can be rearranged taking 2 kg from side A) and giving 2 kg to side B). They then look like this:



So 9 kg and 7 kg should be swapped.

- 24. Hint:** Start with the easiest. Use trial and error. Consider the carry overs.

Solution:

Units $4 + ? = _ \text{ last digit zero.}$

$$\begin{array}{r} 2 \square 4 \\ + \square 1 6 \\ \hline 9 \square 0 \end{array}$$

Write in the 6 and carry 1 to the tens.

Tens $? + 1 + \text{carry } 1 = ?$
There are 2 missing digits and they can't be the same. The remaining digits are 3, 5, 7 and 8.

Try 3: $3 + 1 + \text{carry } 1 = 5$ (correct)
Write in the 3 and the 5 as a trial.

Hundreds $2 + ? = 9$
 $2 + 7 = 9$ Write in the 7.

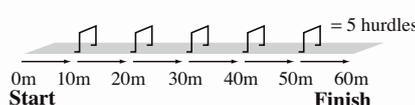
$$\begin{array}{r} 2 \square 4 \\ + 7 \square 6 \\ \hline 9 \square 0 \end{array}$$

Check the sum.
The missing digits are:

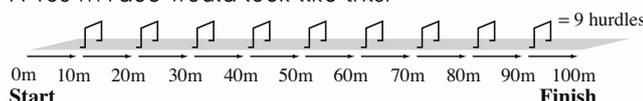
1.2

- 22. Hint:** Draw a diagram.

Solution: The 60 m race looks like this:



A 100 m race would look like this:



There would be 9 hurdles required for a 100 m race.

- 23. Hint:** Add all weights on the scale. Halve the sum to find what each side should weigh.

Solution: Side A) weighs $1 + 4 + 5 = 10$ kg

Side B) weighs $2 + 6 + 8 = 16$ kg

Together the sides weigh $10 + 16 = 26$ kg

For both sides to be in balance they should each weigh half of this or 13 kg.

The weights can be rearranged taking 3 kg from side B) and giving 3 kg to side A). They then look like this:



So 5 kg and 8 kg should be swapped.

- 24. Hint:** Start with the easiest. Use trial and error. Consider the carry overs.

Solution:

Units $7 + ? = 9$

$$7 + 2 = 9$$

Write in the 2.

$$\begin{array}{r} 1 \square 7 \\ + 4 8 \square \\ \hline \square \square 9 \end{array}$$

Tens Possible digits in the tens position are now 0, 3, 5 and 6.

Try 0: $0 + 8 = 8$ (not possible because 8 is used)

Try 3: $3 + 8 = 11$ (not possible because 1 is used).

Try 5: $5 + 8 = 13$ (correct)
Write in the 5 and the 3 as a trial.

Carry 1 to the hundreds.

$$\begin{array}{r} 1 \\ 1 \square 7 \\ + 4 8 \square \\ \hline \square \square 9 \end{array}$$

Hundreds $1 + 4 + \text{carry } 1 = 6$
Write in the 6.

Check the sum.

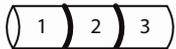
The missing digits are:

$$\begin{array}{r} 1 \\ 1 \square 7 \\ + 4 8 \square \\ \hline \square \square 9 \end{array}$$

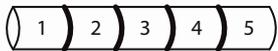
1.3

22. **Hint:** Draw a diagram. Consider the number of cuts, rather than the number of pieces. Find out how long it takes to make 1 cut.

Solution: Sawing a pole into 3 pieces involves 2 cuts.



If this takes 12 minutes then each cut would take half of that or 6 minutes.



Sawing a pole into 5 pieces would require 4 cuts, each taking 6 minutes.

$$4 \times 6 = 24$$

It would take Sarah 24 minutes to saw a pole into five pieces.

23. **Hint:** First find the weight of one white sphere.

Solution: $\circ \circ \circ \circ = 16 \text{ kg}$

then $\circ = 16 \div 4$

So $\circ = 4$

And if $\bullet \bullet \bullet = \circ \circ$

then $\bullet \bullet \bullet = 4 + 4 = 8$

then $\bullet = 8 \div 4$

So $\bullet = 2$

One black sphere weighs 2 kg.

24. **Hint:** Complete what is given. Start with the easiest. Use trial and error. Consider the carry overs.

Solution: Remaining digits are 1, 3, 4, 6, 7 and 9.

Units $? + 5 = ?$

First look at the tens. There must be a carry for 8 not to be repeated.

Remaining digits that may be added to 5 are 6, 7 and 9.

Try 6:

$$\begin{array}{r} 206 \\ + \square\square5 \\ \hline \square81 \end{array}$$

$6 + 5 = 11$ (possible)
Write in 6 and 1 and carry the 1.

Tens

$$\begin{array}{r} 206 \\ + \square75 \\ \hline \square81 \end{array}$$

$0 + ? + \text{carry } 1 = 8$
 $0 + 7 + 1 = 8$ (possible)
Write in the 7.

Hundreds Remaining digits are 3, 4, and 9. These digits will not work in this position because none of these digits, added to 2, will result in any of the remaining possibilities. Go back to the units and try 7 then 9 if necessary.

Check the sum.
The missing digits are:

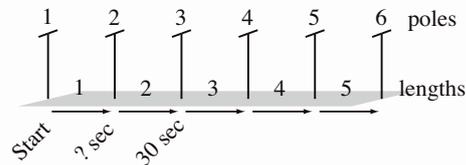
$$\begin{array}{r} 209 \\ + 175 \\ \hline 384 \end{array}$$

1.4

1.3 - 1.4

22. **Hint:** Draw a diagram. Consider the length between poles, rather than the number of poles. Find the time required to jog between 2 poles (i.e. 1 length).

Solution: It takes Kaitlan 30 seconds to jog between 3 power poles so it would take her half of that or 15 seconds to jog between 2 power poles. This is 1 length.



Reaching pole 6 would mean she has jogged 5 lengths between poles.

$$5 \times 15 = 75 \text{ seconds}$$

It would take Kaitlan 75 seconds to reach pole six.

23. **Hint:** Add all weights on the scale. Halve the sum to find what each side should weigh.

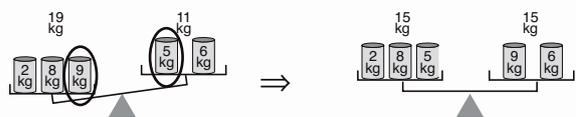
Solution: Side A) weighs $2 + 8 + 9 = 19 \text{ kg}$

Side B) weighs $5 + 6 = 11 \text{ kg}$

Together the sides weigh $11 + 19 = 30 \text{ kg}$

For both sides to be in balance they should each weigh half of this or 15 kg.

The weights can be rearranged taking 4 kg from side A) and giving 4 kg to side B). They then look like this:



So 9 kg and 5 kg should be swapped.

24. **Hint:** Complete what is given. Start with the easiest. Use trial and error. Consider the carry overs.

Solution:

Tens $5 + 0 = 5$ (not possible, 5 is used)
so $4 + 0 + \text{carry } 1 = 5$
Write in the 4.

$$\begin{array}{r} \square4\square \\ + 807 \\ \hline \square5\square \end{array}$$

Units $? + 7 = ?$ The sum must have a carry over of 1. The remaining digits are 3, 6 and 9.

Try 3: $3 + 7 = 10$ (not possible because 0 is used)

Try 6: $6 + 7 = 13$ (possible)
Write in the 6 and 3.

$$\begin{array}{r} \square46 \\ + 807 \\ \hline \square53 \end{array}$$

Hundreds $? + 8 = ?$

The result must be less than 10.

Of the remaining digits, 1, 2 and 9, the only possible digit to try is 1.

Try 1: $1 + 8 = 9$ (possible)
Write in the 1 and 9.

$$\begin{array}{r} 146 \\ + 807 \\ \hline 953 \end{array}$$

Check the sum.

The missing digits are:

$$\begin{array}{r} 146 \\ + 807 \\ \hline 953 \end{array}$$

5. [Large Number +]

Skill 5.1 Adding large numbers without carry over using columns.

Yellow 1 1 2 2 3 3 4 4
Red 1 1 2 2 3 3 4 4

- Always keep your working columns in line, aligning units with units, tens with tens, etc.
- Add from right to left.

Q.

$$\begin{array}{r} 125 \\ + 43 \\ \hline \end{array}$$

A.

$$\begin{array}{r} \text{hundreds} \\ \text{tens} \\ \text{units} \\ 125 \\ + 43 \\ \hline 168 \end{array}$$

Units:

$$5 + 3 = 8 \Rightarrow 8 \text{ units}$$

Tens:

$$2 + 4 = 6 \Rightarrow 6 \text{ tens}$$

Hundreds:

$$1 + 0 = 1 \Rightarrow 1 \text{ hundred}$$

a)

$$\begin{array}{r} 63 \\ + 24 \\ \hline 87 \end{array}$$

Units first!

b)

$$\begin{array}{r} 38 \\ + 41 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 15 \\ + 43 \\ \hline \end{array}$$

d)

$$\begin{array}{r} 134 \\ + 23 \\ \hline \end{array}$$

e)

$$\begin{array}{r} 437 \\ + 152 \\ \hline \end{array}$$

f)

$$\begin{array}{r} 305 \\ + 681 \\ \hline \end{array}$$

g)

$$\begin{array}{r} 4245 \\ + 742 \\ \hline \end{array}$$

h)

$$\begin{array}{r} 6031 \\ + 2358 \\ \hline \end{array}$$

i)

$$\begin{array}{r} 212 \\ 413 \\ + 31 \\ \hline \end{array}$$

j)

$$\begin{array}{r} 53 \\ 516 \\ + 20 \\ \hline \end{array}$$

k)

$$\begin{array}{r} 114 \\ 863 \\ + 22 \\ \hline \end{array}$$

l)

$$\begin{array}{r} 7164 \\ 1403 \\ + 231 \\ \hline \end{array}$$

m)

$$\begin{array}{r} 1730 \\ 15 \\ 3021 \\ + 12 \\ \hline \end{array}$$

n)

$$\begin{array}{r} 3205 \\ 210 \\ 534 \\ + 40 \\ \hline \end{array}$$

o)

$$\begin{array}{r} 300 \\ 402 \\ 7056 \\ + 21 \\ \hline \end{array}$$

p)

$$\begin{array}{r} 6201 \\ 140 \\ 1035 \\ + 322 \\ \hline \end{array}$$

13. [Operations]

Skill 13.1 Using the commutative property for addition.

Yellow 1 2 2 3 3 4 4
Red 1 2 2 3 3 4 4

COMMUTATIVE PROPERTY for +

$$2 + 5 = 7$$

$$5 + 2 = 7$$

You can add numbers in any order
and not change the outcome.

SO $2 + 5 = 5 + 2$

Q. $6 + 3 = 3 + 6$
True or false?

A. true

Solve both sides of the equation and
compare the results.

$$6 + 3 = 9$$

$$3 + 6 = 9$$

The results are the same.

a) $10 - 4 = 4 - 10$
True or false?

$$10 - 4 = 6 \text{ but}$$

$$4 - 10 \neq 6 \quad \boxed{\text{false}}$$

b) $4 + 5 = 5 + 4$
True or false?

$$\dots\dots\dots \boxed{}$$

c) $7 + 9 = 9 + 7$
True or false?

$$\dots\dots\dots \boxed{}$$

d) $9 - 3 = 3 - 9$
True or false?

$$\dots\dots\dots \boxed{}$$

e) $2 + 9 = 9 + 2$
True or false?

$$\dots\dots\dots \boxed{}$$

f) $8 - 1 = 1 - 8$
True or false?

$$\dots\dots\dots \boxed{}$$

g) $\boxed{8} + 2 = 2 + 8$

h) $9 + 6 = \boxed{} + 9$

i) $4 + 1 = \boxed{} + 4$

j) $\boxed{} + 5 = 5 + 2$

k) $\boxed{} + 7 = 7 + 5$

l) $3 + 9 = \boxed{} + 3$

m) $\boxed{} + 13 = 13 + 6$

n) $17 + 10 = \boxed{} + 17$

o) $11 + 19 = \boxed{} + 11$

p) $\boxed{} + 22 = 22 + 14$

q) $\boxed{} + 17 = 17 + 12$

r) $15 + 18 = \boxed{} + 15$

s) $13 + \boxed{} = 31 + 13$

t) $\boxed{} + 16 = 16 + 28$

u) $27 + \boxed{} = 7 + 27$