

Answers for Y6 Maths (wb 06.07.20)

Morning Mental Maths

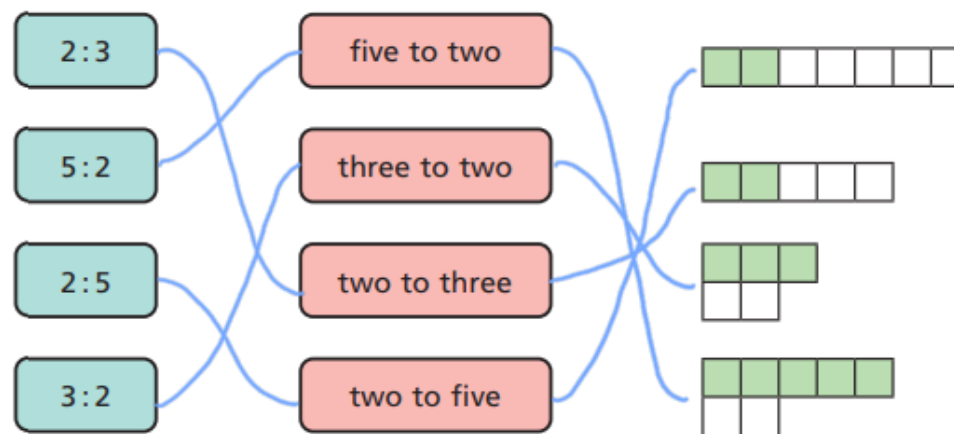
Monday	Tuesday	Wednesday	Thursday	Friday
1. 245	11. 480	21. 594	31. 168	41. 336
2. 3	12. 6	22. 7	32. 4	42. 8
3. 0.733	13. 0.02	23. 0.0933	33. 22,200	43. 0.0079
4. 74	14. 151	24. 75	34. 71	44. 164
5. 0.54	15. 0.67	25. 0.31	35. 0.04	45. 0.01
6. 717/1000	16. 159/1000	26. 7/1000	36. 113/1000	46. 1/1000
7. 1.17	17. 1.3	27. 2.89	37. 1.47	47. 0.24
8. 20°C	18. 16°C	28. 31°C	38. 29°C	48. 60°C
9. 32	19. 61	29. 37.5	39. 25	49. 50
10. 5	20. 6	30. 4	40. 9	50. 7

Monday

Answers provided at end of download

Tuesday

- 1 The ratios show shaded parts to non-shaded parts.
Match the ratios, statements and bar models.



2



The ratio of purple
to yellow is 5 : 4

Mo

It is 4 : 5



Alex

Who is correct? Mo

Explain your answer.

There are 5 purple and 6 yellow.

3

Dani has some counters, cubes and marbles.

Complete the sentences.

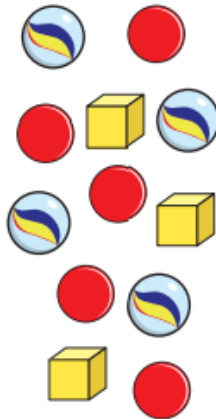
The ratio of counters to marbles is 5 : 4

The ratio of marbles to cubes is 4 : 3

The ratio of cubes to counters is 3 : 5

The ratio of counters to cubes is 5 : 3

The ratio of counters to cubes to marbles is 5 : 3 : 4



4

Brett has drawn some triangles and squares.

The ratio of triangles to squares is 1 : 3

a) Are there more triangles or more squares? Squares

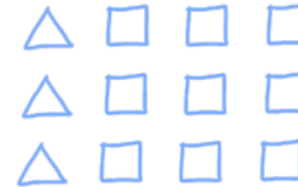
Explain how you know.

For every 1 triangle there are 3 squares.

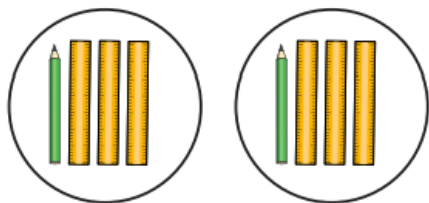
b) Brett has drawn more than 10 shapes.

Draw what Brett might have drawn.

e.g.



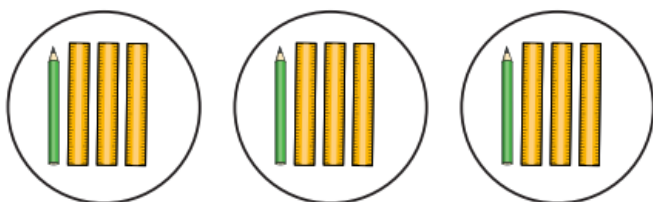
- 5 Here are some rulers and some pencils.



a) What is the ratio of pencils to rulers?

1 : 3

b) Here are some more rulers and pencils.



Ron

The ratio of pencils to rulers is the same as in part a).

Ron is wrong because there are more pencils and more rulers.



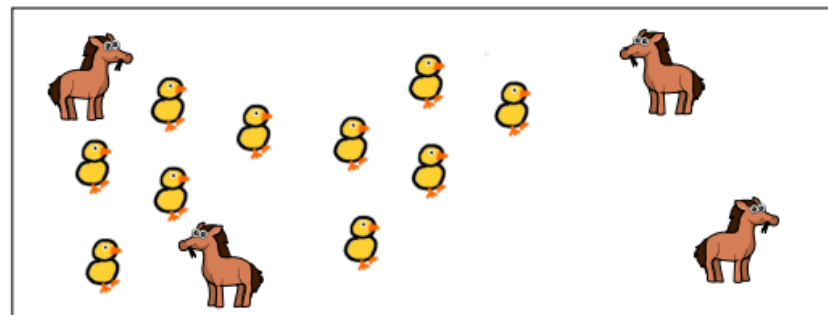
Dora

Who is correct? Ron

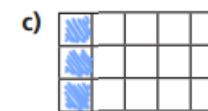
Explain your answer.

There are still 3 rulers for every 1 pencil.

- 6 The ratio of horses to chickens in a field is 2:5
Here are the horses. Draw the chickens.



- 7 Shade squares so that the ratio of shaded to non-shaded squares is 1:4



- 8 A box contains dark, white and milk chocolates.

$\frac{3}{8}$ of the box are dark chocolates.

$\frac{1}{2}$ of the box are milk chocolates.

The rest are white chocolates.

What does each ratio represent?

a) 1:3

white to dark

b) 4:1

milk to white

c) 3:5

dark to not dark

Extension Challenges

We have provided the full mark scheme so that you can decide how many marks to award yourself and see the different possible solutions.

18

Accept 18:12 **OR** 12:18

[1]

Award **TWO** marks for the correct answer of 1.05 kg.

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

■ $12 \div 4 = 3$

$350 \times 3 = 1050$

$1050 \div 1000 =$ wrong answer

Do not accept 1050 g

Accept for **ONE** mark 10.5 or 105 as evidence of appropriate working.

Working must be carried through to reach an answer for the award of **ONE** mark.

Up to 2m

[2]

1. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.			
a	£49.50	1	
b	£42.50	1	
c	£7.50	1	
d	£15.00	1	

Wednesday

- 1 Eva is baking cakes and cookies.
For every 1 cake, she will bake 2 cookies.



- a) If Eva bakes 3 cakes, how many cookies will she bake?

6

- b) If Eva bakes 10 cookies, how many cakes will she bake?

5

- 2 The ratio of red to yellow counters is 2:3
There are 20 counters in total.
How many counters of each colour are there?
You can colour the counters to help you.



yellow

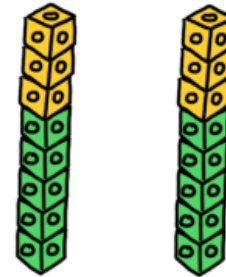
12

red

8

- 3 Tom has 5 green cubes for every 3 yellow cubes.
He has 16 cubes in total.

Draw a diagram to represent this.



- 4 Esther is building a tower of cubes.
The ratio of red to yellow cubes is 3:1
The tower has 6 yellow cubes. How many red cubes are there?

18

- 5 Nijah plays 21 games of chess.
For every 2 games she wins, she loses 5 games.
How many more games does she lose than win?

9

- 6 a) Huan is making a drink by mixing 1 part juice with 5 parts water.
Complete the table to show the amounts he would need to use.

Juice	Water
1 litre	5 litres
2 litres	10 litres
4 litres	20 litres
100 ml	500 ml
200 ml	1 litre
300 ml	1.5 litres
6 litres	30 litres
150 ml	750 ml

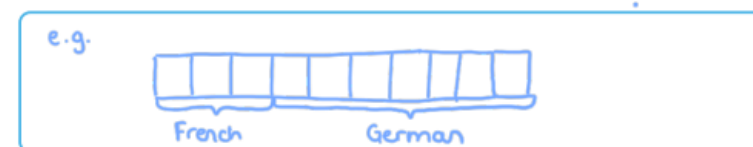
- b) Huan makes 1 litre 500 ml of drink in total.
How much juice and water does he need to use?

juice 250 ml water 1,250 ml

- 7 A group of students study French or German in the ratio 3:7

a) Which subject has the most students? German

b) Draw a diagram to represent this.



- c) There are 80 students in total.
How many more students study German than French?

32

- 8 Describe a situation for each bar model. Various answers.

a) green _____
blue _____

b) _____
green _____
blue _____

c) green _____
blue _____

Compare answers with a partner.

What is the same and what is different?

Extension Challenges

We have provided the full mark scheme so that you can decide how many marks to award yourself and see the different possible solutions.

Award **TWO** marks for the correct answer of 3.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g.

- $2.5 \times 6 = 15$
 $15 \div 5$

Answer need not be obtained for the award of **ONE** mark.

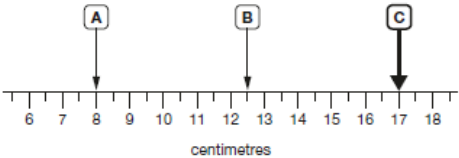
Misreads are **not** allowed.

Up to 2m
[2]

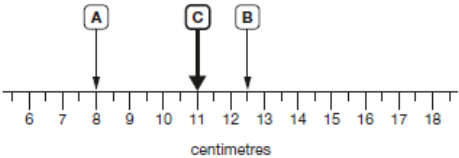
(a) $4\frac{1}{2}$ **OR** 4.5

1

(b) A point marked on the line at either 17cm **OR** 11cm, ie



OR



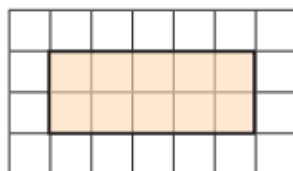
The mark need not touch the line provided the intention is clear.

The marked point need not be labelled.

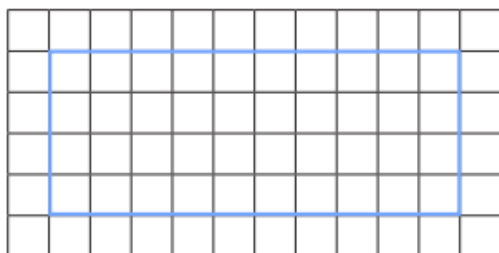
U1
[2]

Thursday

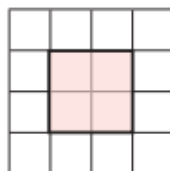
- 1 a) Here is a rectangle.



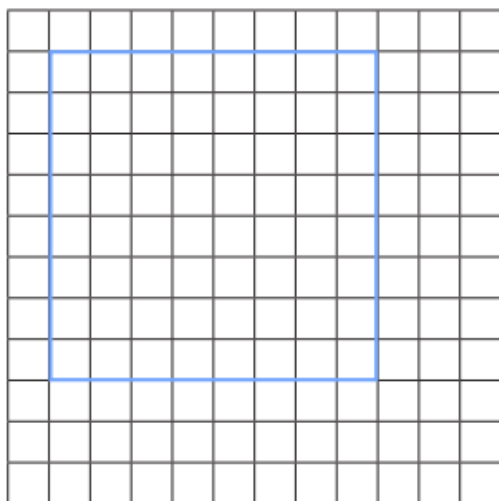
Draw another rectangle where each side is twice as big.



- b) Here is a square.



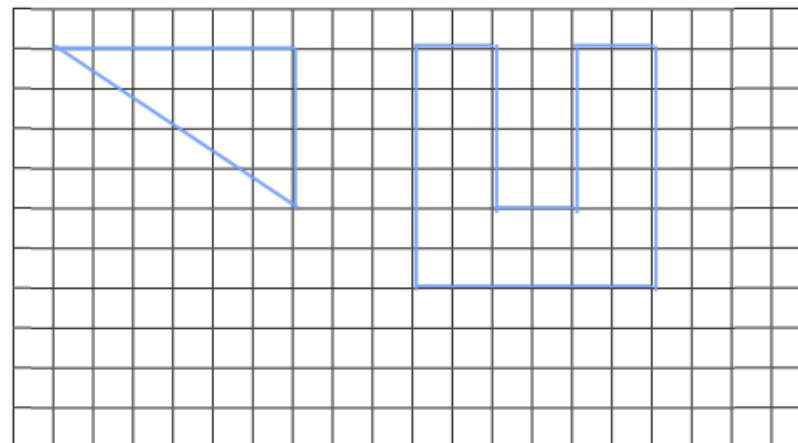
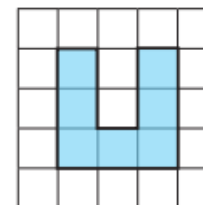
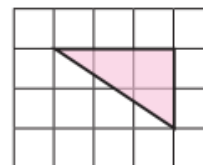
Draw another square where each side is 4 times as big.



- 2 a) Explain what it means for a shape to be enlarged by a scale factor of 2

All of the side lengths are twice as big.

- b) Enlarge the shapes by a scale factor of 2



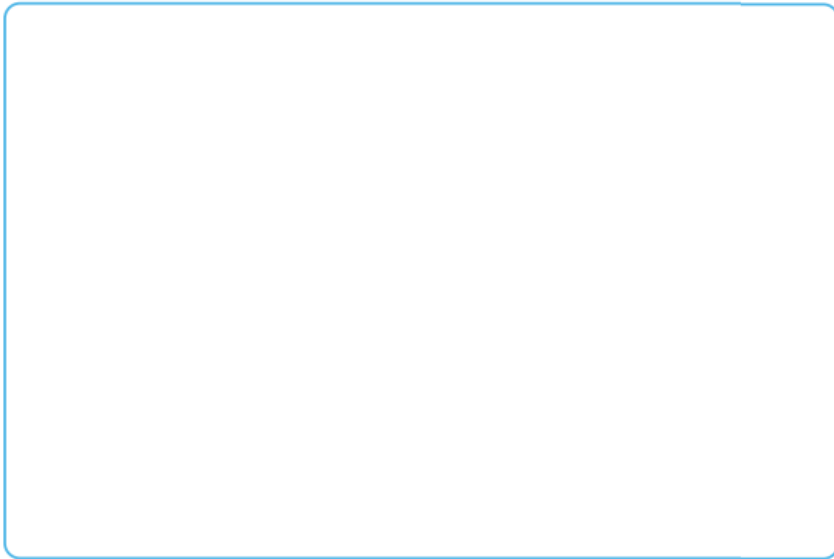
- 3 Complete the sentence.

A shape in which each side has tripled in size has been enlarged by a scale factor of 3

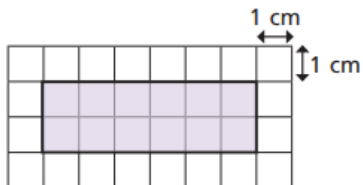
- 4 Here is a rectangle.



- a) Measure the side lengths of the rectangle and label them on the diagram.
b) Enlarge the rectangle by a scale factor of 3 and label the side lengths.

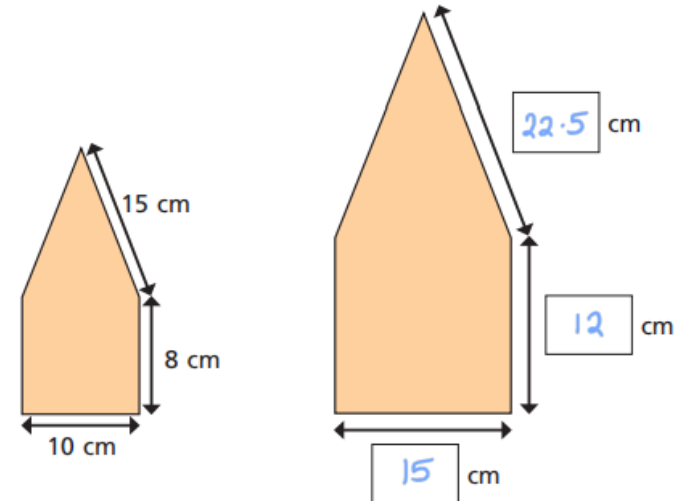


- 5 The sides of the rectangle are increased by a scale factor of 2
What is the perimeter of the new shape?



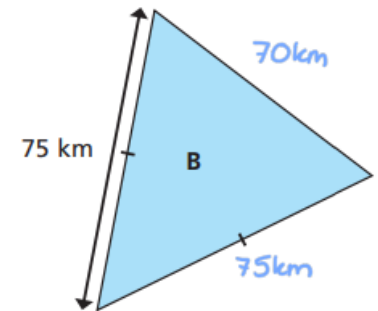
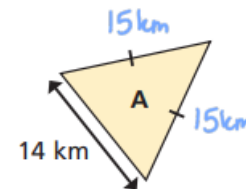
32 cm

- 6 The shape has been enlarged by a scale factor of $1\frac{1}{2}$
Fill in the dimensions of the new shape.



- 7 Triangle A has been enlarged by a scale factor of 5 to make triangle B.

Find the perimeter of each triangle.



perimeter of A = 44 km perimeter of B = 220 km

Extension Challenges

We have provided the full mark scheme so that you can decide how many marks to award yourself and see the different possible solutions.

Award **TWO** marks for all three answers correct, as shown:

$$k = \boxed{500} \quad m = \boxed{750} \quad n = \boxed{250}$$

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg

- $$\begin{array}{l} 2n + 3n + n + 1500 \\ 1500 \div 6 \end{array}$$

OR

a trial and improvement method, eg

- $$\begin{array}{rclclcl} 1000 & + & 1500 & + & 500 & = & 3000 \\ 200 & + & 300 & + & 100 & = & 600 \\ 400 & + & 600 & + & 200 & = & 1200 \end{array}$$

Accept for **ONE** mark any permutation of the correct answers, eg

$$k = 750, m = 250, n = 500$$

Answer need not be obtained for the award of **ONE** mark.

A 'trial and improvement' method must show evidence of improvement.

Up to 2 (U1)

[2]

Friday

- 1 Whitney buys 6 cans of lemonade for £3

a) How much do 12 cans cost?

£6

b) How much do 3 cans cost?

£1.50

c) How much do 15 cans cost?

£7.50



- 2 The ratio of red to green grapes in a bowl is 3:1

a) Explain what this means.

For every 3 red grapes there is 1 green grape.

b) There are 12 more red grapes than green grapes.

What is the total number of grapes in the bowl?

24

- 3 Amir is making some chocolate chip biscuits.

He has this list of ingredients to make 6 biscuits.

Chocolate chip biscuits (makes 6)

120 g butter

72 g sugar

180 g plain flour

60 g chocolate chips

- a) How much of each ingredient does Amir need to make 2 biscuits?

butter 40 g

plain flour 60 g

sugar 24 g

chocolate chips 20 g

- b) How much of each ingredient does Amir need to make 10 biscuits?

butter 200 g

plain flour 300 g

sugar 120 g

chocolate chips 100 g

- c) Amir has 240 g of chocolate chips.

What is the maximum number of biscuits he can make?

24

- 4 Dexter has some 20p and 50p coins in a jar.
For every three 20p coins he has one 50p coin.
There are 12 coins in the jar in total.
How much money is in the jar?

£3.30

- 5 A drink is made using 3 parts orange juice to 2 parts lemonade.
Esther makes 1.2 litres of this drink.
How much orange juice does she need?

720 ml

- 6 Two shops sell the same cereal but in different-sized boxes.

Shop A	Shop B
500 g of cornflakes £2.10	750 g of cornflakes £3.30

Which shop is better value for money? Shop A

- 7 Dora draws two similar rectangles.

My larger rectangle is
4 times the size of the
smaller one.



The perimeter of the
larger rectangle is 48 cm.

The length and width of both rectangles are even numbers.
What is the largest possible area for the small rectangle?

8 cm²

- 8 Aisha has two boxes of sweets.

- In the first box, the ratio of red sweets to green sweets is 3 : 1
- In the second box, for every 2 orange sweets there are 3 yellow sweets.
- There is the same number of sweets in each box.
- There are 12 yellow sweets in the second box.

How many sweets are in the first box?

20

Extension Challenges

We have provided the full mark scheme so that you can decide how many marks to award yourself and see the different possible solutions.

Award **TWO** marks for the correct answer of 90g.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $300 \div 400 = \frac{3}{4}$

$$\frac{3}{4} \times 120$$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

9.6 or equivalent, eg:

- 9.60

! Measures

2

or

Shows or implies the correct scale factor, eg:

- $\times 3$ seen

- $13.5 \div 4.5 = 3$

- $3.2 + 3.2 + 3.2$

- $1 : 3$

OR

Shows the digits 96

OR

Shows or implies a complete correct method, eg:

[2]

- $13.5 \div 4.5 \times 3.2$

- $$\begin{array}{r}
 2.10 \text{ (error)} \\
 4.5 \overline{) 13.5}
 \end{array}$$

$$3.2 \times 2.10 = 6.4 \text{ (error)}$$

1

[2]