

# Section One:

## Fraction Arithmetic

1

$$\frac{4}{6} + \frac{3}{6} =$$

[2017]



[1 mark]

2

$$\frac{4}{5} - \frac{1}{5} =$$

[2016S]



[1 mark]

3

Tick (✓) **two** cards that give a **total** of  $\frac{1}{2}$

[New]

$$\frac{3}{10}$$

$$\frac{1}{6}$$

$$\frac{3}{8}$$

$$\frac{1}{10}$$

$$\frac{1}{8}$$

$$\frac{3}{6}$$

[1 mark]

**4**

$$\frac{62}{100} - \frac{36}{100} =$$

[2017]

[1 mark]

**5**

$$\frac{3}{4} - \frac{3}{8} =$$

[2017]

[1 mark]

**6**

$$\frac{3}{10} - \frac{1}{20} =$$

[2016]

[1 mark]

**7**

$$\frac{2}{6} - \frac{1}{8} =$$

[2017]

[1 mark]

**8**

$$\frac{3}{4} + \frac{2}{5} =$$

[2016S]

[1 mark]

**9**

$$\frac{1}{4} + \frac{1}{5} + \frac{1}{10} =$$

[2017]

[1 mark]

**10**

$$2\frac{1}{3} + \frac{5}{6} =$$

[2017]



[1 mark]

**11**

$$1\frac{4}{5} + \frac{3}{10} =$$

[2016]

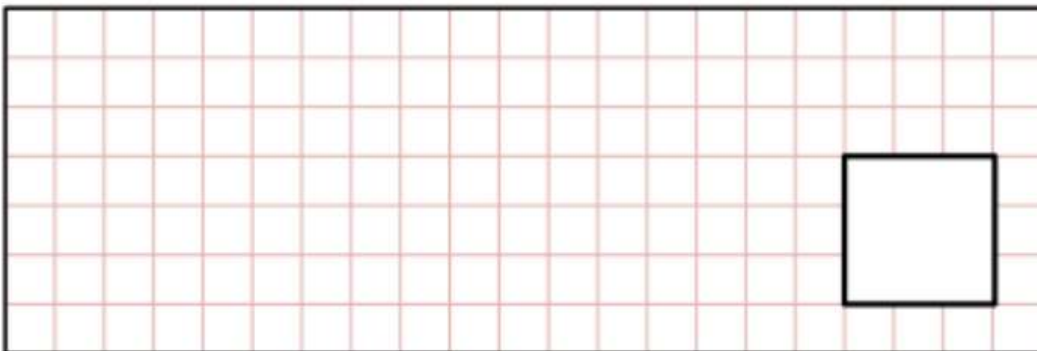


[1 mark]

**12**

$$1\frac{1}{5} - \frac{1}{4} =$$

[2016S]

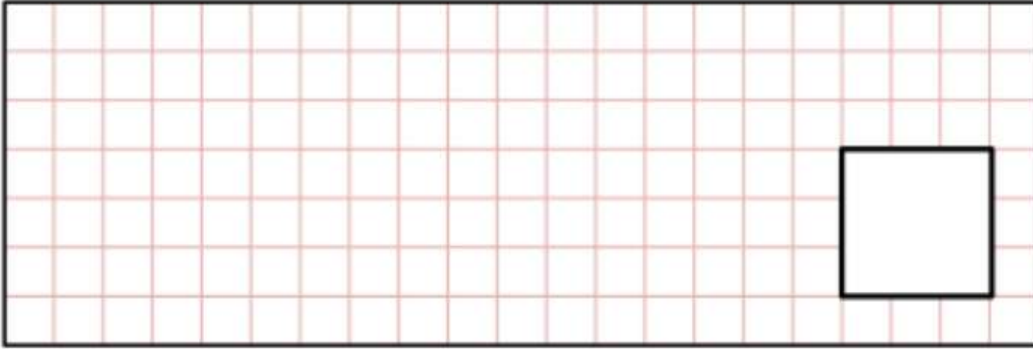


[1 mark]

13

$$1\frac{1}{4} - \frac{1}{3} =$$

[2016]

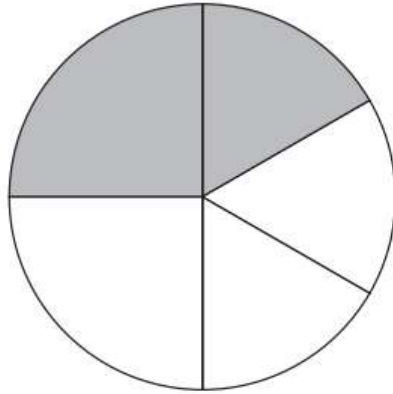


[1 mark]

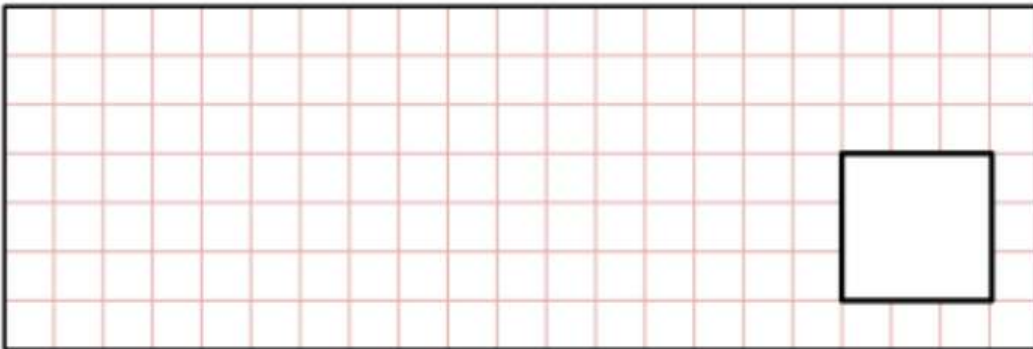
14

In this circle,  $\frac{1}{4}$  and  $\frac{1}{6}$  are shaded.

[2017]



What fraction of the whole circle is **not** shaded?



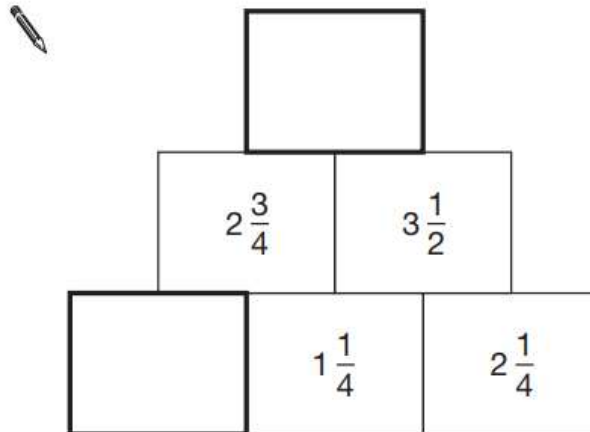
[2 marks]

**17**

In this diagram, the number in each box is the **sum** of the two numbers below it.

[2014]

Write the missing numbers.

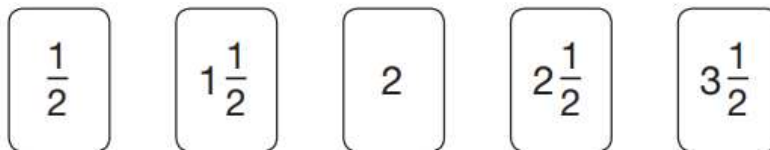


[2 marks]

**18**

Here are five number cards.

[2010]



Use **three** of the number cards to make this calculation correct.

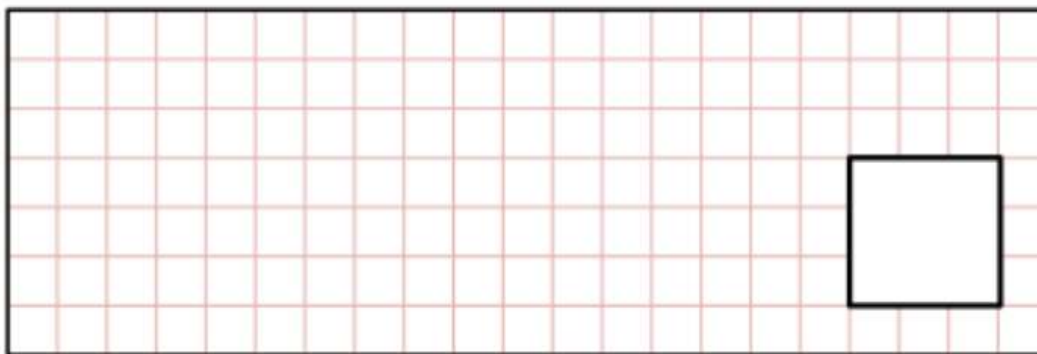
$$\left( \square + \square \right) \times \square = 10$$

[1 mark]

**25**

$$\frac{4}{6} \times \frac{3}{5} =$$

[2017]

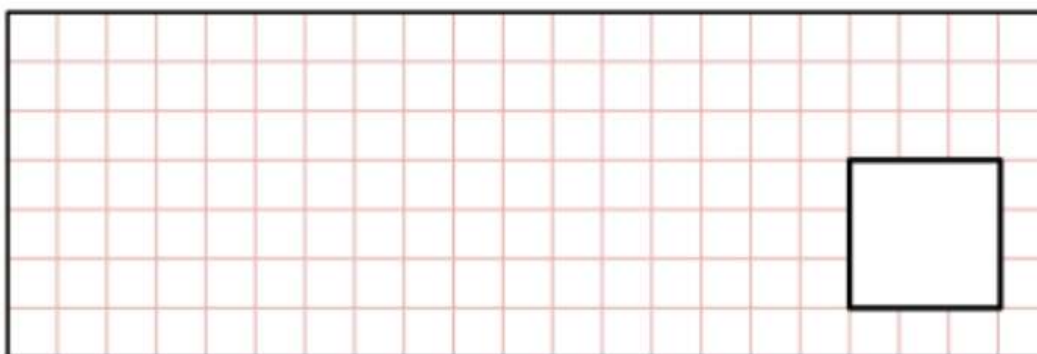


[1 mark]

**26**

$$\frac{4}{5} \div 4 =$$

[2017]

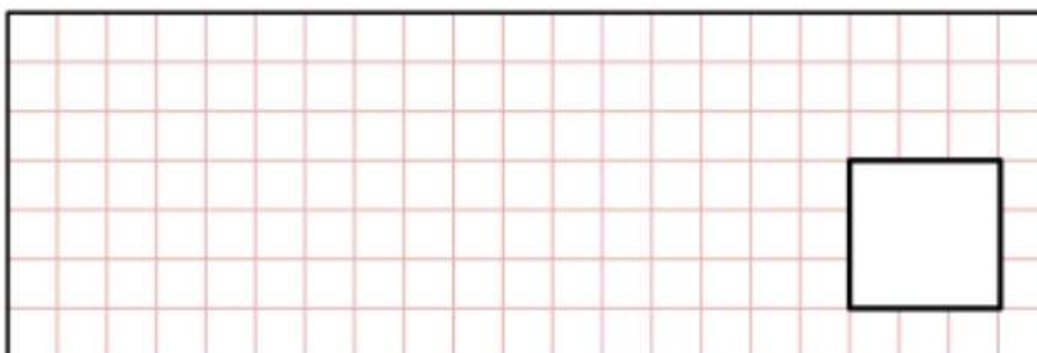


[1 mark]

**27**

$$\frac{3}{5} \div 3 =$$

[2016]



[1 mark]

**28**

$$\frac{5}{8} \div 2 =$$

[2017]

[1 mark]

**29**

$$\frac{2}{5} \times 140 =$$

[2016]

[1 mark]

**30**

$$17 \times 1\frac{1}{2} =$$

[2016S]

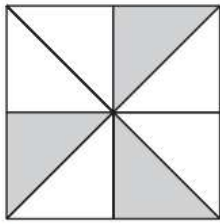
[1 mark]

23  
24

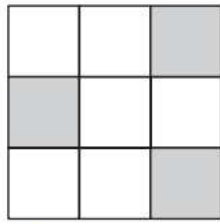
# Section Two:

## Equivalent Fractions

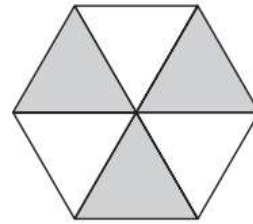
**1** Each of these diagrams is divided into equal parts.  
Some of the parts are shaded.  
[2014]



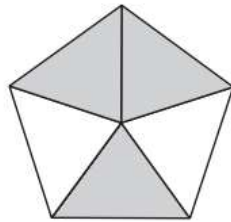
**A**



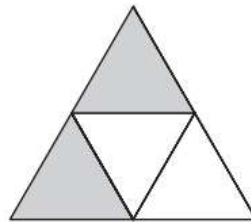
**B**



**C**



**D**



**E**

Write the letters of all the diagrams that have exactly  $\frac{1}{2}$  shaded.



\_\_\_\_\_

Which of the diagrams has exactly  $\frac{1}{3}$  shaded?



[1 mark]

**3**

Write the two missing values to make these equivalent fractions correct.

[2016]

$$\frac{\square}{3} = \frac{8}{12} = \frac{4}{\square}$$

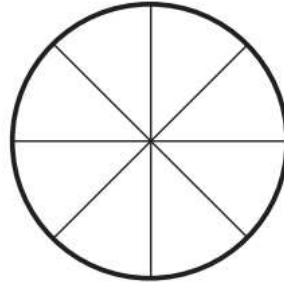
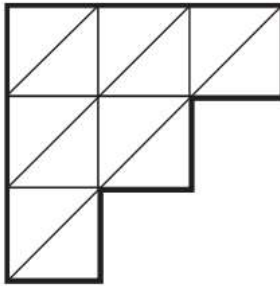
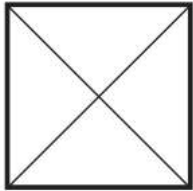
[2 marks]

**6**

Each diagram below is divided into equal sections.

[2016]

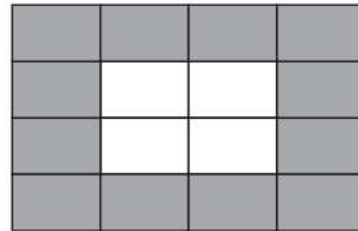
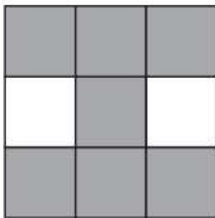
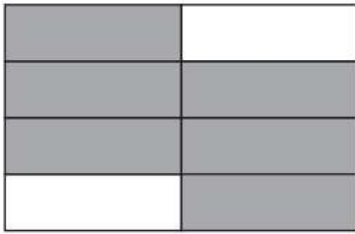
Shade three-quarters of each diagram.



[2 marks]

**9**Tick two shapes that have  $\frac{3}{4}$  shaded.

[2017]

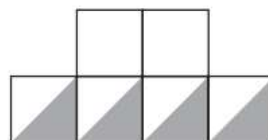
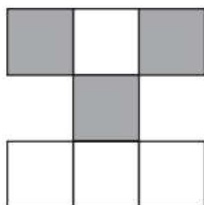
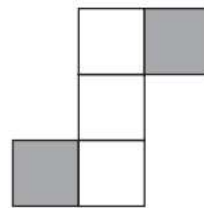
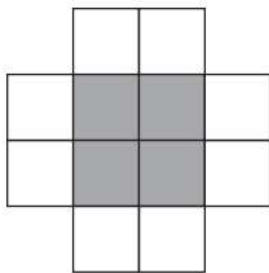


[1 mark]

**10**

These diagrams are all made of squares.

[2010]

Put a tick (✓) if exactly  $\frac{1}{3}$  of it is shaded. Put a cross (✗) if it is not.

[2 marks]

**15**

Join each fraction to the correct decimal card.

[2014]

One has been done for you.

$\frac{3}{10}$

0.03

$\frac{3}{5}$

0.06

$\frac{3}{100}$

0.3

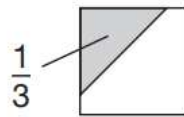
$\frac{3}{50}$

0.6

[2 marks]

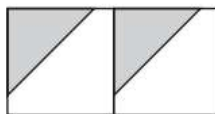
**16** $\frac{1}{3}$  of this square is shaded.

[2008]



The same square is used in the diagrams below.

What fraction of this diagram is shaded?



What fraction of this diagram is shaded?



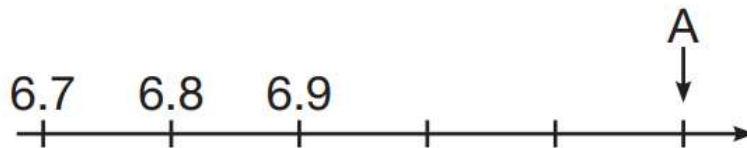
[2 marks]

# Section Three:

## Ordering Fractions

1

[2013]



What number is marked at A?



[1 mark]

2

[2007]

Write these numbers in order of size, starting with the smallest.

3.01

13.0

0.31

1.30

3.1



smallest

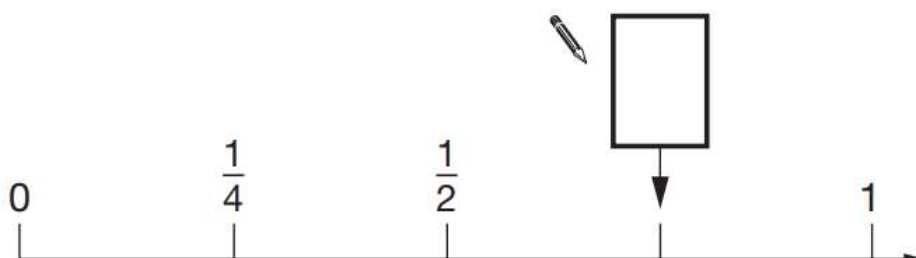
[1 mark]

3

[2011]

Here is part of a number line.

Write in the missing fraction.



[1 mark]

**4**Write these numbers in order of size, starting with the **smallest**.

[2017]

1.9

0.96

1.253

0.328

smallest

[1 mark]

**5**Put a tick (✓) in **each row** to complete this table.

[2001]

One has been done for you.

	greater than $\frac{1}{2}$	less than $\frac{1}{2}$
<b>0.9</b>	✓	
<b>0.06</b>		
<b><math>\frac{11}{20}</math></b>		
<b>0.21</b>		

[2 marks]

**6**

What number is halfway between 1.4 and 2.1?

[2016S]

[1 mark]

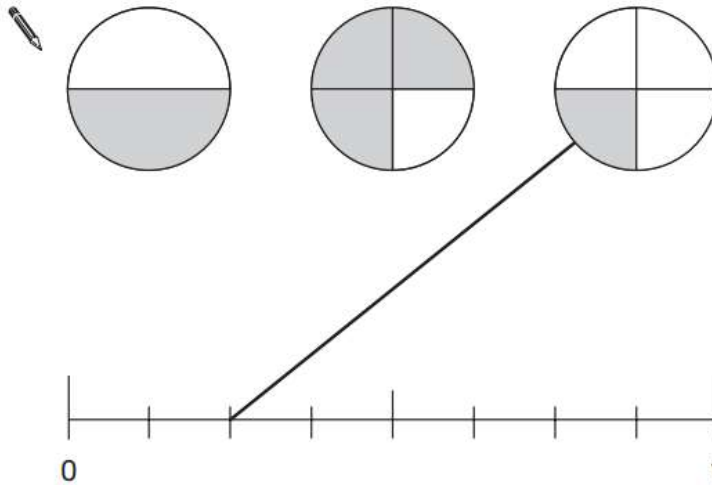
7

A fraction of each shape is shaded.

[2009]

Match each fraction to the correct place on the number line.

One has been done for you.



[2 marks]

8

Write these numbers in order, starting with the **smallest**.

[2016]

0.78

0.607

5.6

0.098

4.003

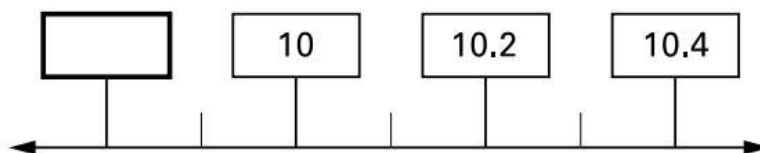
smallest

[1 mark]

9

Write in the **missing** number on this number line.

[2001]



[1 mark]

**11**

Here are four fraction cards.

[2016S]

$\frac{3}{4}$

$\frac{5}{8}$

$\frac{6}{12}$

$\frac{7}{16}$

Use any **three** of the cards to make this correct.

$$\boxed{\phantom{000}} < \boxed{\phantom{000}} < \boxed{\phantom{000}}$$

[1 mark]

**12**Circle **all** the numbers that are **greater than** 0.6

[2007]



0.5

0.8

0.23

0.09

0.67

[1 mark]

**13**

Write these numbers in order, starting with the smallest.

[2014]

8.12

1.8

8.118

8.2

1.28



<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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smallest

[1 mark]

**14**In each box, circle the number that is **greater**.

[2017]

$1\frac{1}{2}$

1.2

$1\frac{1}{4}$

1.3

$1\frac{5}{100}$

1.4

$1\frac{3}{5}$

1.5

[2 marks]

**15**

Circle the number that is closest to 20

[2015]

19.95

20.1

19.09

20.09

20.201

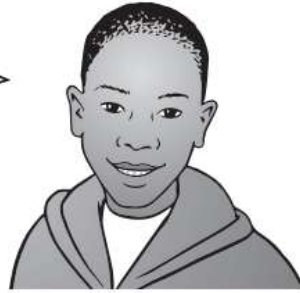
[1 mark]

17

Adam says,

[2017]

0.25 is **smaller** than  $\frac{2}{5}$



Explain why he is correct.

A large, empty, cloud-shaped outline intended for the student to write their explanation.

[1 mark]

# Section Four:

## Understanding Fractions

1

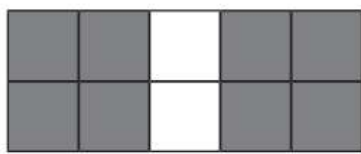
Here are some shapes made of squares.

[2016S]

A fraction of each shape is shaded.

Match each shape to its equivalent fraction.

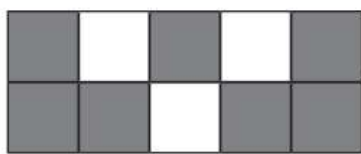
One has been done for you.



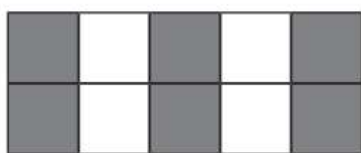
$$\frac{7}{10}$$



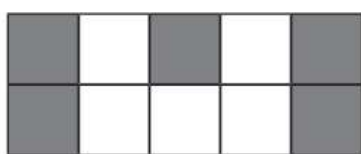
$$\frac{3}{5}$$



$$\frac{1}{2}$$



$$\frac{4}{5}$$



$$\frac{3}{10}$$

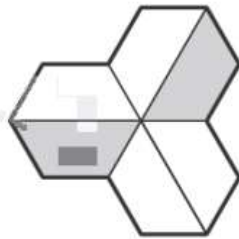
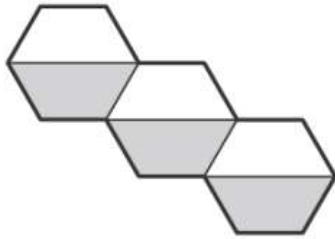
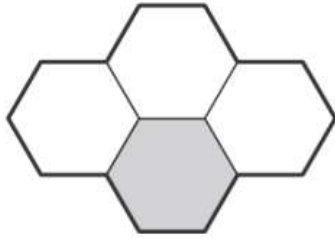
[2 marks]

2

Here are three shapes made from regular hexagons.

[2012]

Write the fraction of each shape that is shaded.

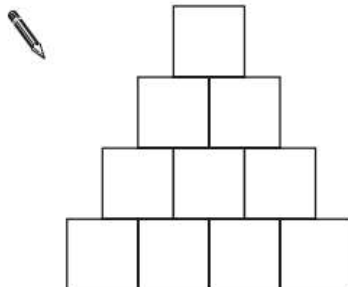


[2 marks]

3

Shade  $\frac{1}{5}$  of this shape.

[2008]

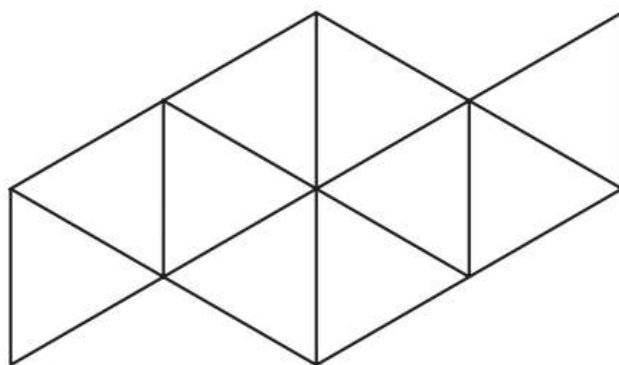


[1 mark]

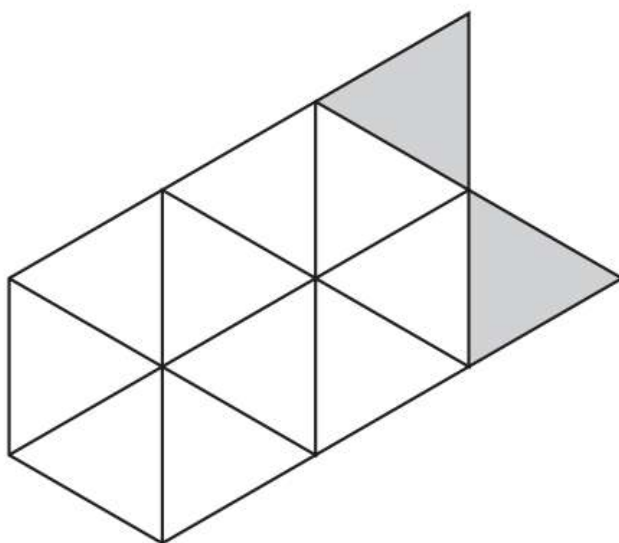
6

Shade  $\frac{1}{5}$  of this shape.

[2015]



Shade **more** triangles on this shape so that  $\frac{1}{3}$  is shaded.

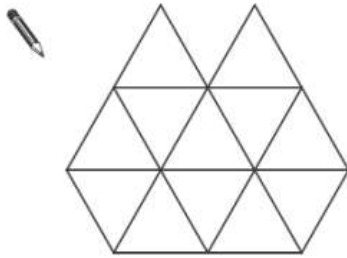


[2 marks]

11

Shade  $\frac{1}{4}$  of this shape.

[2012]



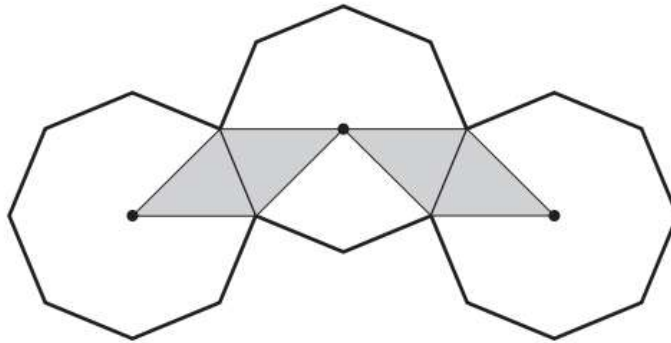
[1 mark]

12

The diagram shows three regular octagons joined together.

[2007]

There is a dot at the centre of each octagon.



What fraction of the diagram is shaded?



[1 mark]

13

[2009]

Stefan has a bag that contains 3 blue marbles and 5 red marbles only.



What fraction of the marbles in the bag are blue?



Stefan adds one blue marble and one red marble to the bag.

What fraction of the marbles in the bag are blue now?



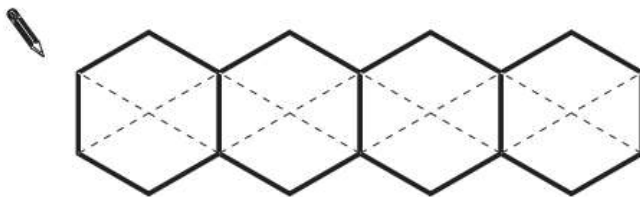
[2 marks]

14

[2003]

This diagram shows four regular hexagons.

Shade in **one third** of the diagram.



[1 mark]

# Section Five:

## Decimals

**1**  $6.1 + 0.3 =$

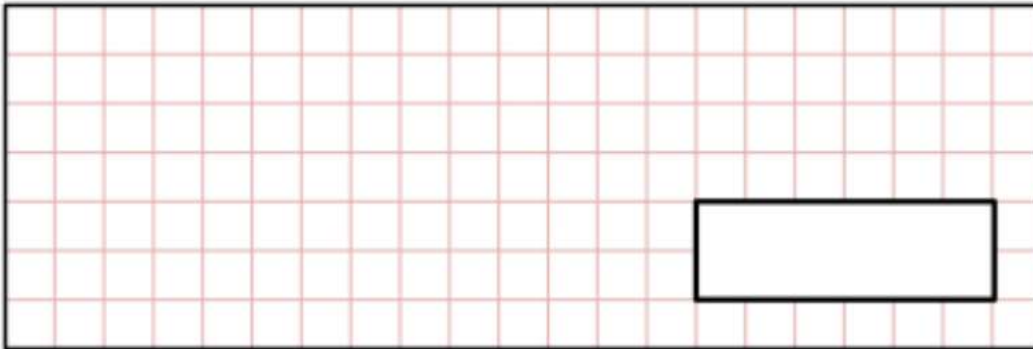
[2016S]



[1 mark]

**2**  $2.5 + 0.05 =$

[2016S]



[1 mark]

**3** Circle two numbers that add together to equal **0.25**

[2016]

0.05

0.23

0.2

0.5

[1 mark]

**4**

$4 - 1.15 =$

[2016]

[1 mark]

**5**Circle **two** numbers which **add** to make **0.12**

[2000]

0.1    0.5    0.05    0.7    0.07    0.2

[1 mark]

**6**

$9 - 3.45 =$

[2017]

[1 mark]

**7**

Circle two decimals that have a difference of 0.5

[2009]



0.2    0.25    0.4    0.45    0.6    0.75

[1 mark]

8

Two decimal numbers add together to equal 1

[2016S]

One of the numbers is 0.007

What is the other number?

[1 mark]

9

$$15.4 - 8.88 =$$

[2016S]

A large grid for showing the method of subtraction. A small empty box is provided for the final answer.

[1 mark]

10

Jacob cuts 4 metres of ribbon into **three** pieces.

[2016]

The length of the first piece is **1.28** metres.

The length of the second piece is **1.65** metres.

Work out the length of the third piece.

Show your method

A large grid for showing the method of calculation. A small empty box is provided for the final answer.

[2 marks]

**11**  $3.005 + 6.12 =$

[2016]

[1 mark]

**12**  $2.7 + 3.014 =$

[2017]

[1 mark]

**13**  $15.98 + 26.314 =$

[2016]

[1 mark]

**14**

$125.48 - 72.3 =$

[2016]

A large rectangular grid with a smaller empty rectangular box on the right side for writing the answer.

[1 mark]

**15**Circle the two decimals which are **closest in value** to each other.

[2002]

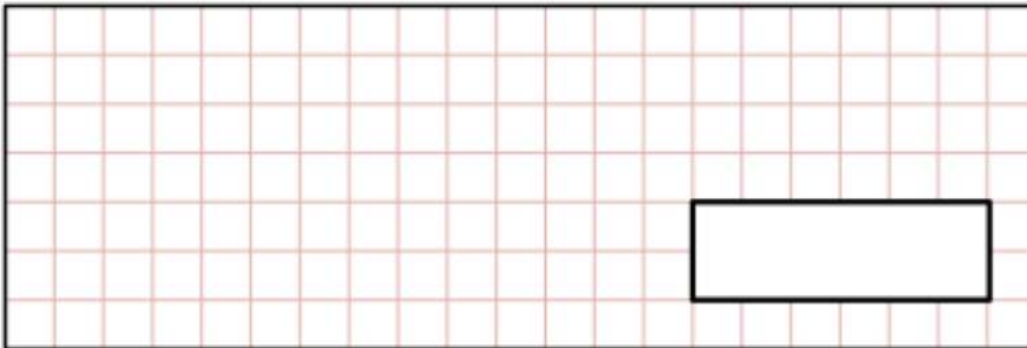
0.9    0.09    0.99    0.1    0.01

[1 mark]

**16**

$37.8 - 14.671 =$

[2017]

A large rectangular grid with a smaller empty rectangular box on the right side for writing the answer.

[1 mark]

**17**

Write in the missing number.

[2015]



$8.5 + 14.7 = 10.2 +$

A rectangular box for writing the missing number in the equation.

[1 mark]

18

Alfie says,

[2015]



***'When you multiply two numbers together, the answer is always greater than either of the numbers you started with.'***

Is Alfie correct?  
Circle **Yes** or **No**.

 Yes / No

Explain how you know.

[1 mark]

19

$$1.28 \times 100 =$$

[2016S]

[1 mark]

**20**

$0.04 \div 10 =$

[2017]

[1 mark]

**21**

$0.9 \times 200 =$

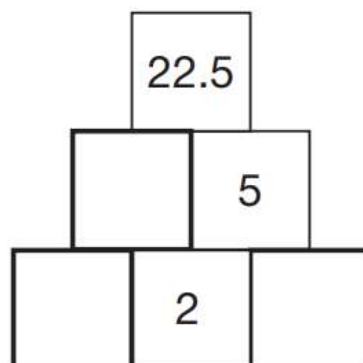
[2017]

[1 mark]

**22**The number in a box is the **product** of the two numbers below it.

[2016S]

Write the missing numbers.



[2 marks]

**23**

$0.9 \div 10 =$

[2016]

[1 mark]

**24**

$15 \times 6.1 =$

[2016]

[1 mark]

**25**

$1.52 \times 6 =$

[2016S]

[1 mark]

56  
57

# Section Six:

## Percentages

**1** 20% of 1,500 =

[2016S]



[1 mark]

**2** 20% of 1,800 =

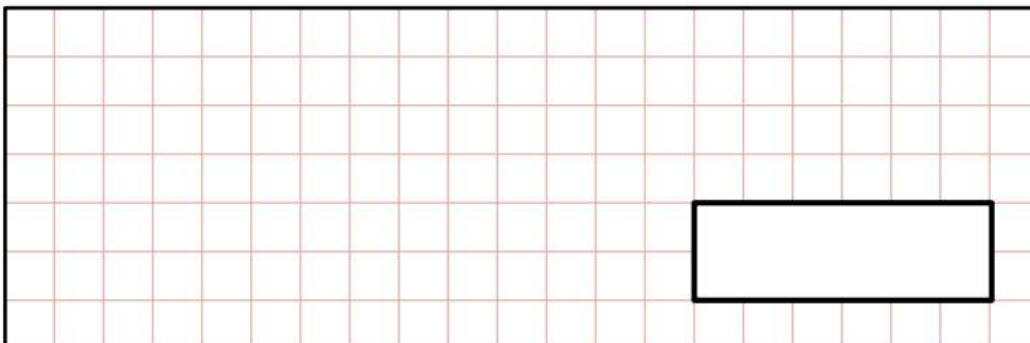
[2016]



[1 mark]

**3** 60% of 765 =

[2000]



[1 mark]

4

5% of £3600 =

[2004]

[1 mark]

5

15% of 460 =

[2001]

[1 mark]

6

200 children went on holiday.

[2014]

10% of the children went to Wales.

25% of the children went to Scotland.

How many **more** children went to Scotland than went to Wales?

Show your method

[2 marks]

7

[2008]



Emily makes 250 grams of a snack mixture.

15% of the weight is raisins, 25% is banana chips and the rest is peanuts.

How many grams of **peanuts** does she use?

Show your method

[2 marks]

8

55% of 640 =

[2015]

[1 mark]



**14**

7% of 500 =

[2017]

[1 mark]

**15**15%  $\times$  1,000 =

[2017]

[1 mark]

64  
65

66

67