

# Year 7

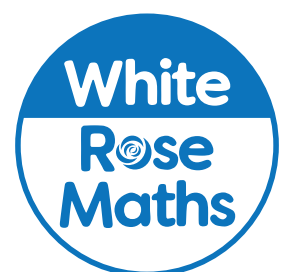
## Mathematics

**Core:** Calculator allowed

Time allowed: 45 minutes

|               |     |  |       |  |      |  |
|---------------|-----|--|-------|--|------|--|
| First name    |     |  |       |  |      |  |
| Middle name   |     |  |       |  |      |  |
| Last name     |     |  |       |  |      |  |
| Date of birth | Day |  | Month |  | Year |  |
| Teacher       |     |  |       |  |      |  |

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For more information, please visit [www.whiterosemaths.com](http://www.whiterosemaths.com)



1

Circle the numbers that round to 350 to the nearest ten.

345

355

350.9

344.9

351

364

2 marks

What is 12.51 rounded to 1 significant figure?

Circle your answer.

10

13

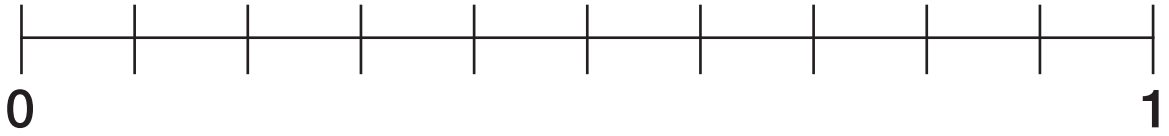
1

12.5

1 mark

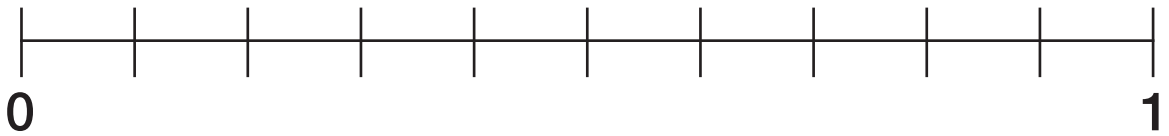
2

Draw an arrow to show the position of  $\frac{7}{10}$



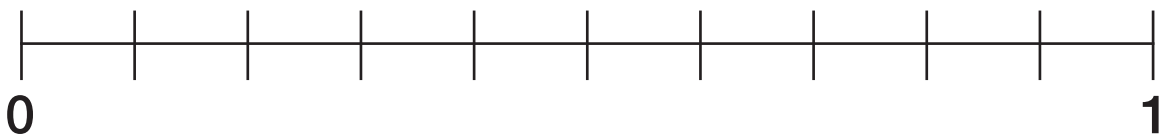
1 mark

Draw an arrow to show the position of  $\frac{2}{5}$



1 mark

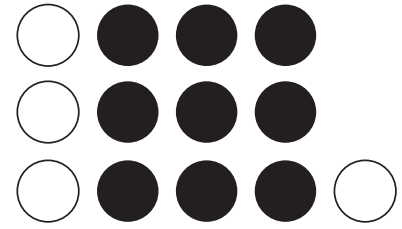
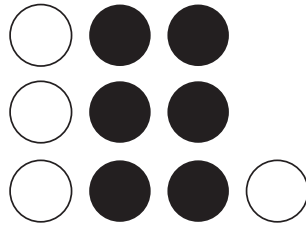
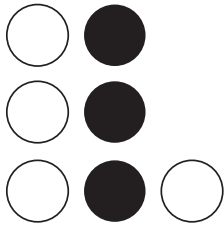
Draw an arrow to show the approximate position of  $\frac{25}{100}$



1 mark

3

Here are the first three terms of a sequence that uses black and white counters



How many black counters would there be in the 6<sup>th</sup> term of the sequence?

1 mark

How many white counters would there be in the 25<sup>th</sup> term of the sequence?

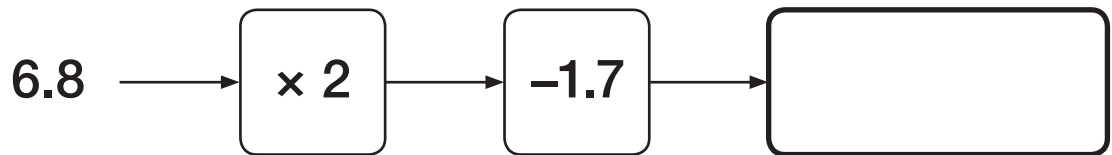
1 mark

**4**

Find the missing output.

Input

Output



1 mark

Find the missing input.

Input

Output



1 mark

5

Write three hundred million, eighty-thousand and twelve in figures.

1 mark

Use  $<$ ,  $>$  or  $=$  to make the statements correct.

250 million  1 billion

1 mark

0.4  0.36

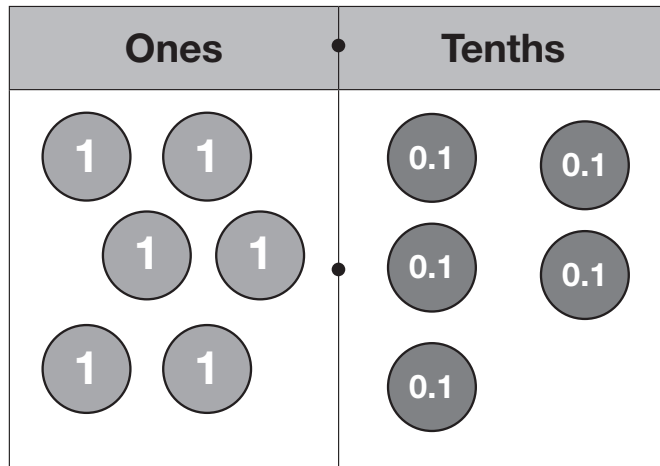
1 mark

16 hundredths   $\frac{3}{10}$

1 mark

6

What number is represented on the place value grid?



1 mark

Jack makes another number on the place value grid.



3.8 is the same as  
38 tenths

Explain why Jack is **correct**.

1 mark

**7**

Given that  $a = 7.5$  and  $b = 19.5$ , use your calculator to work out the values of these expressions.

$$ab$$

---

1 mark

$$\frac{b}{a}$$

---

1 mark

$$(b - a)^2$$

---

1 mark**8**

Liam types a number into his calculator.

He multiplies the number by 17

His answer is 397.8

Using  $p$  to represent Liam's number, show this information as an equation.

---

1 mark

Work out the value of Liam's original number.

---

1 mark



9

Write the next term in each of these **linear** sequences.

140

110

80

1 mark

$3x + 1$

$5x + 1$

$7x + 1$

1 mark

10

Here are some digit cards.

2

3

5

7

9

Choose two of these cards to make a fraction that is equivalent to  $\frac{1}{3}$

1 mark

**11**

Use your calculator to solve these equations.

$$13.25 = a - 4.9$$

1 mark

$$38 = \frac{b}{40}$$

1 mark

$$25.6 + c = 145$$

1 mark

**12**

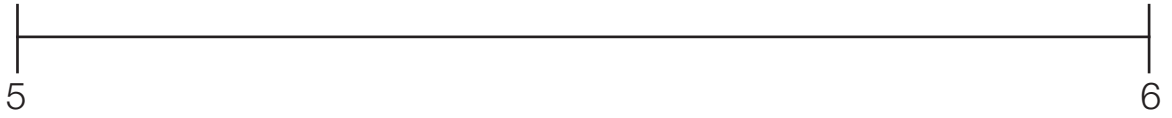
Write T or F next to each statement to show whether they are true or false.

|                         |  |
|-------------------------|--|
| $x + 2x \equiv 3x$      |  |
| $a + a + a \equiv a^3$  |  |
| $3x + 3y \equiv 6xy$    |  |
| $x^2 + x^2 \equiv 2x^2$ |  |

2 marks

**13**

You may use the number line to help you in this question.



Write a number that is greater than  $5\frac{1}{2}$  but less than 6

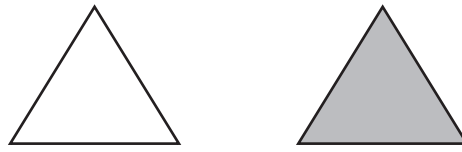
1 mark

Write a number that is greater than  $5\frac{3}{4}$  but less than  $5\frac{4}{5}$

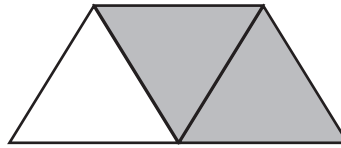
1 mark

14

Teddy is making shapes using **white** and **grey** triangles.



What **fraction** of this shape is grey?



|  |
|--|
|  |
|  |

1 mark

Teddy adds more triangles to the shape to make a new shape.

80% of the new shape is grey.

What triangles could Teddy have added?

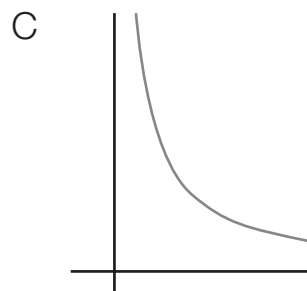
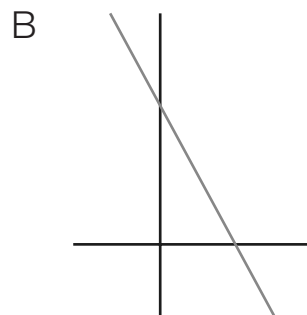
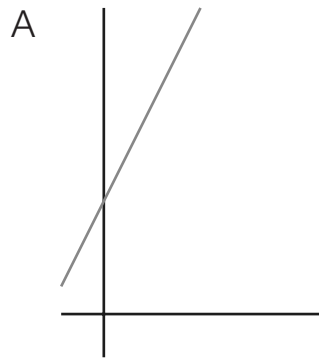
1 mark

**15**

Complete the table.

| $x$          | 0 | 1 | 2 | 3 |
|--------------|---|---|---|---|
| $y = 2x + 3$ |   | 5 |   |   |

2 marks

Put a tick next to the graph that illustrates  $y = 2x + 3$ 

1 mark

**16**

Look at these equations.

$$15 = 7 + x$$

$$x + 5 = 2 + y$$

Use both equations to work out the value of  $y$ .

$$y = \boxed{\phantom{000}}$$

1 mark

**17**Which of these is **not** equal to 6%?

Circle your answer.

0.06

0.6

 $\frac{6}{100}$  $\frac{3}{50}$ 

1 mark

Complete each statement with a correct **percentage**.

$$0.2 < \boxed{\phantom{00}} \% < \frac{1}{4}$$

1 mark

$$\frac{1}{50} < \boxed{\phantom{00}} \% < 0.04$$

1 mark

**END OF TEST**

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