Year 8

Mathematics

Core: Calculator allowed

Time allowed: 45 minutes

First name	
Middle name	
Last name	
Date of birth	Day ☐ Month ☐ Year ☐
Teacher	

This assessment has been designed by White Rose Maths.

For more information, please visit **www.whiterosemaths.com**

White Rose Maths

1 Show that $\frac{1}{4} \times \frac{2}{5} = \frac{1}{10}$

2 marks

2 Here is part of a price list from a shop.

Price list	
pens	10 for 91p
pencils	25 for £1.05
rulers	20 for £2.40

What is the total cost of 100 pens, 100 pencils and 100 rulers?

£

3 marks

3   The table shows information about how students in Years 7 and 8 get to school.

	Walk	Bus	Car	Other	Total
Year 7	56		25		180
Year 8	45	32		53	
Total		74			340

Complete the two-way table.

2 marks

A student is chosen at random.

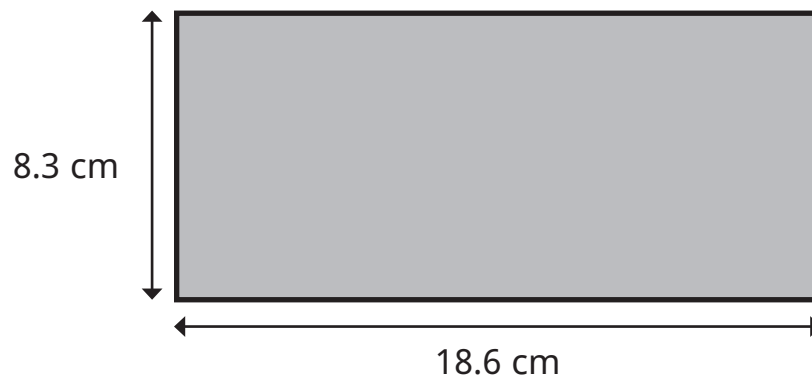What is the probability that this student walks to school?

1 mark

4 One day, 4 out of 32 students in a class are absent.

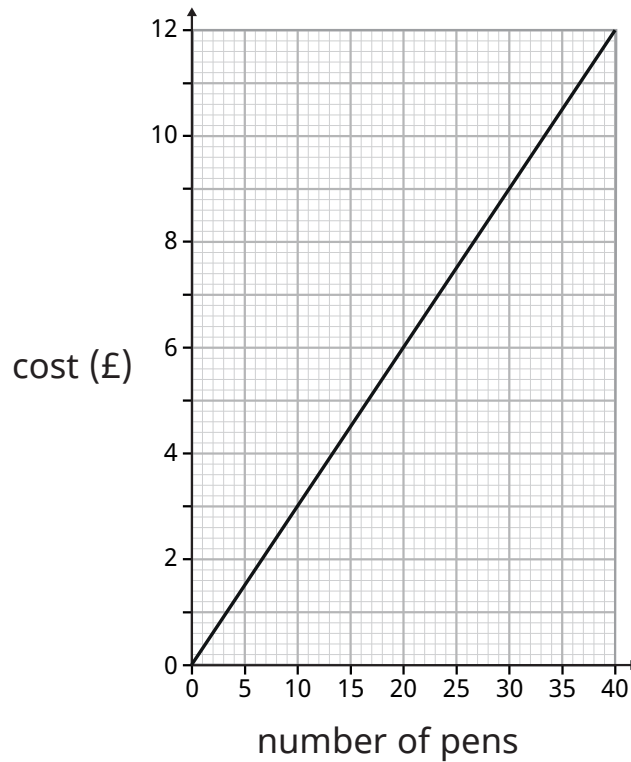What percentage of the class are absent on this day?

	%

5 **Estimate** the area of the rectangle.

8.3 cm

18.6 cm

	cm²

6 The graph shows the cost of buying a given number of pens.

cost (£)

number of pens

How much does it cost to buy 20 pens?

£

How does the graph show that the cost is in direct proportion to the number of pens?

How much would it cost to buy 300 pens?

£

7 Expand $3(4 - x)$

_____
1 mark

Expand and simplify $5(y + 2) + 2(y - 1)$

_____
2 marks

Factorise fully $2x^2 + 8x$

_____
2 marks

8 The conversion from British pounds (£) to Indian rupees is £1 = 98.11 rupees.

A bag costs 5690.38 rupees.

How much does the bag cost in pounds?

£ ⬚

2 marks

9 Explain why 0.4×10^7 is not in standard form.

1 mark

Write 320 000 000 in standard form.

1 mark

Write 0.00065 in standard form.

1 mark

10 Ron wants to increase 700 by 3%

He writes

$$700 \times 1.3 = 910$$

Explain why Ron is wrong.

1 mark

Complete the statement to show how Ron can increase 700 by 3%

700 × ⬚ = ⬚

1 mark

Decrease 700 by 3%

⬚

2 marks

11 Work out 2^6

1 mark

Simplify $\dfrac{p^{20}}{p^4}$

1 mark

12 The rule for the nth term of a sequence is $5n + 16$

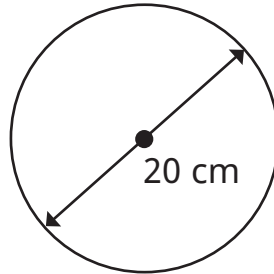Find the 10th term of the sequence.

1 mark

By forming and solving an equation, decide whether 511 is a term of the sequence.

3 marks

13 Find the circumference of the circle.

State units with your answer.

20 cm

14 The mass of a grain of sand is 4.4×10^{-3} g.

A bucket contains 6 million grains of sand.

Find the mass of the sand in the bucket.

g

2 marks

END OF TEST

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