Year 9

Mathematics

Core: Calculator allowed
Time allowed: 45 minutes

First name	
Middle name	
Last name	

Date of birth	Day		Month		Year	

Teacher	

White Rose Maths

1 Which of the roots can be written as an integer?

Circle your answer.

$\sqrt{50}$ $\qquad$ $\sqrt{2}$ $\qquad$ $\sqrt{144}$ $\qquad$ $\sqrt{10}$

1 mark

2 Solve the equations.
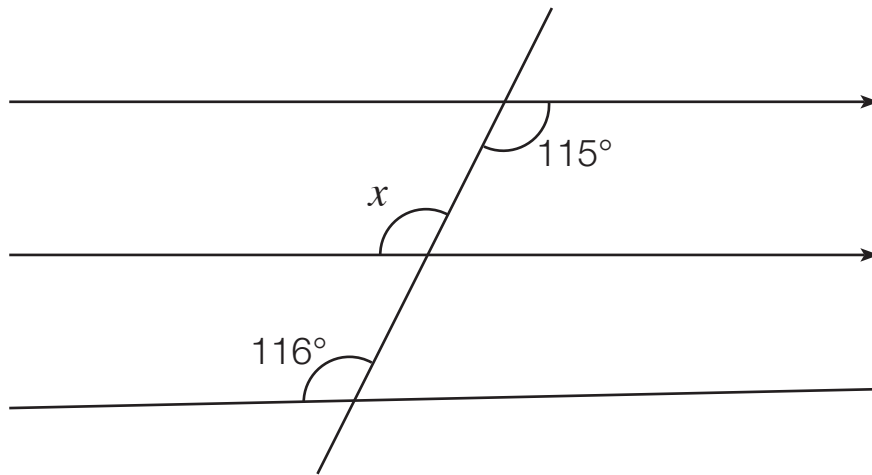
$$\frac{p}{9} = 25$$
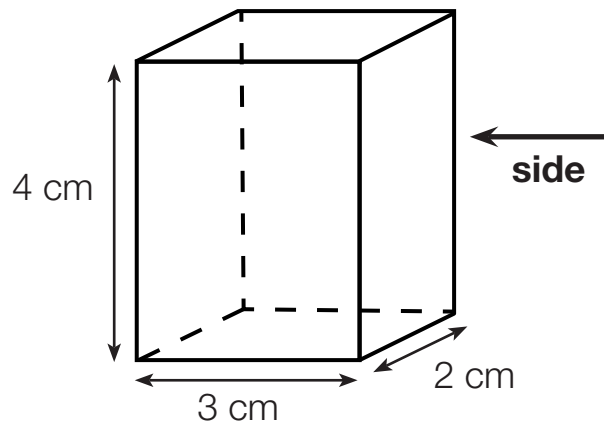
$p =$

1 mark

$$42 = 15q - 21$$

$q =$

2 marks

3

Write down the size of the angle marked x.

Give a reason for your answer.

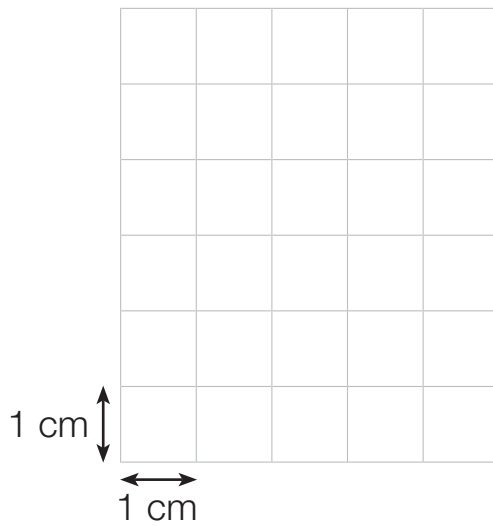°

4 Here is a cuboid.
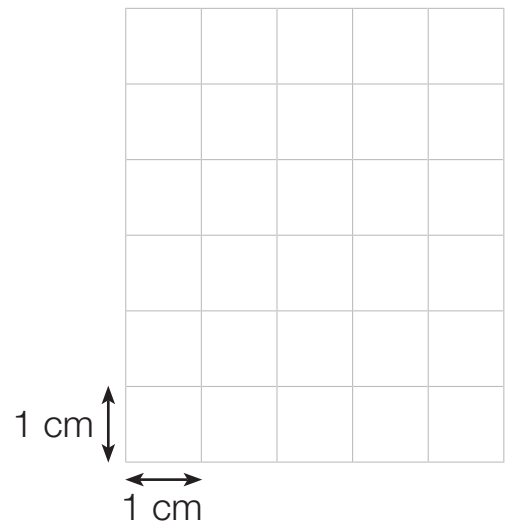

4 cm

side

3 cm

2 cm

On the grid, draw the plan view and side elevation of the cuboid.

plan

1 cm

1 cm

side

1 cm

1 cm

2 marks

5 Find the highest common factor of 24 and 64

2 marks

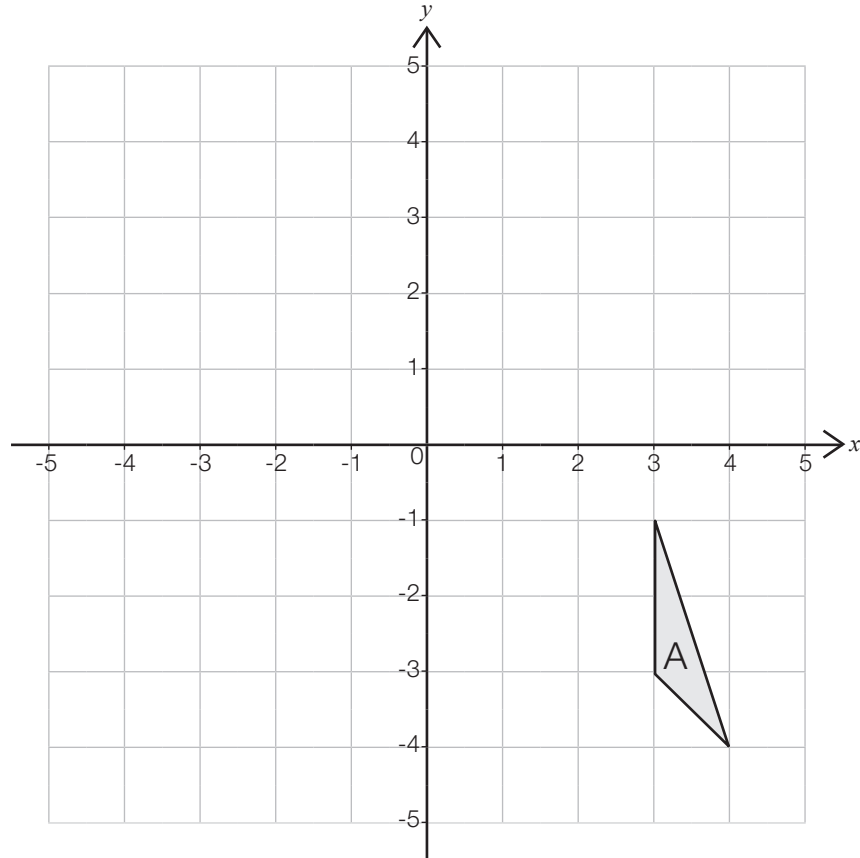Find the lowest common multiple of 24 and 64

2 marks

6 Annie scored 29 out of 35 marks in a test.

What percentage of the test did Annie get correct?

Give your answer to 1 decimal place.

%

2 marks

Translate A by the vector $\begin{pmatrix} -5 \\ 4 \end{pmatrix}$

Label this shape B.

2 marks

Describe fully the single transformation that maps shape B onto shape A.
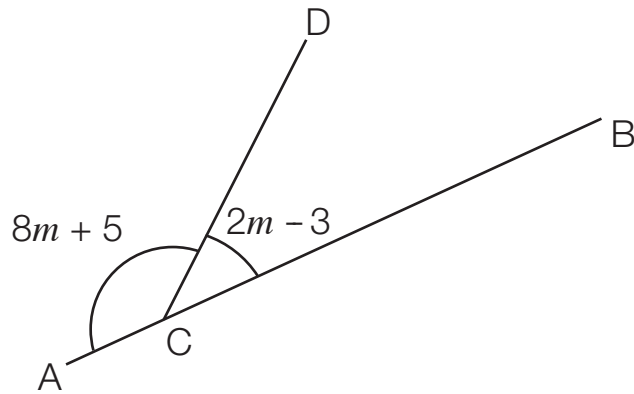
2 marks

8 Expand and simplify.

$$(a + 7)(a - 5)$$

2 marks

9 Line segments AB and CD are straight.

8m + 5

2m − 3

Work out the size of angle BCD.

°

3 marks

10 Shade the locus of points that are less than 5 cm from A and less than 3 cm from B.

A
x

B
x

3 marks

11 Mr Khan wants to hire a carpet cleaning machine for 4 days.

The table shows the cost of hiring a machine from two different companies.

Company	First day's hire	Additional day's hire	Delivery fee
Carpet Co	£25.67	£18.99	Nil
Clean Carpets	£19.23	£19.23	£10.99

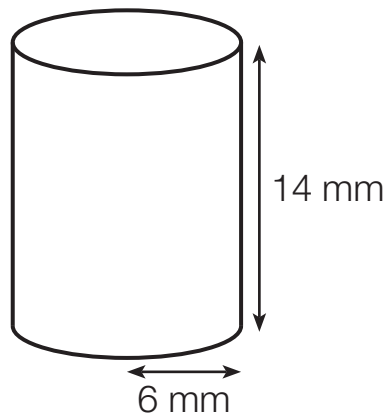> Which company should Mr Khan choose if he wants to pay the least amount of money?

Show workings to support your answer.

12 Here is a solid cylinder.

14 mm

6 mm

Work out the volume of the cylinder.

Give units with your answer.

3 marks

13 The straight line with equation $y = \dfrac{9x - 5}{8}$ passes through the point (2.8, a)

Work out the value of a.

$a =$

2 marks

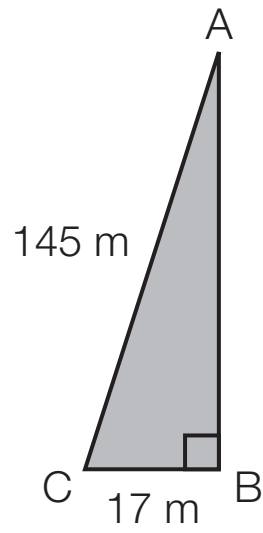**14** In a sale, the normal price of a bicycle is reduced by 35%.

The sale price of the bicycle is £585

Work out the normal price of the bicycle.

£

3 marks

15

A

145 m

C ⌐17 m B

AC = 145 m

BC = 17 m

Work out the perimeter of triangle ABC.

m

3 marks