

Spring Assessment

# Year 9

## Mathematics

**Core:** Calculator allowed

Time allowed: 45 minutes

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

These assessments have been designed by White Rose Maths.  
For more information, please visit [www.whiterosemaths.com](http://www.whiterosemaths.com)



**1**

Which of the roots can be written as an integer?

Circle your answer.

$\sqrt{50}$

$\sqrt{2}$

$\sqrt{144}$

$\sqrt{10}$

1 mark

**2**

Solve the equations.

$$\frac{p}{9} = 25$$

 $p =$ 

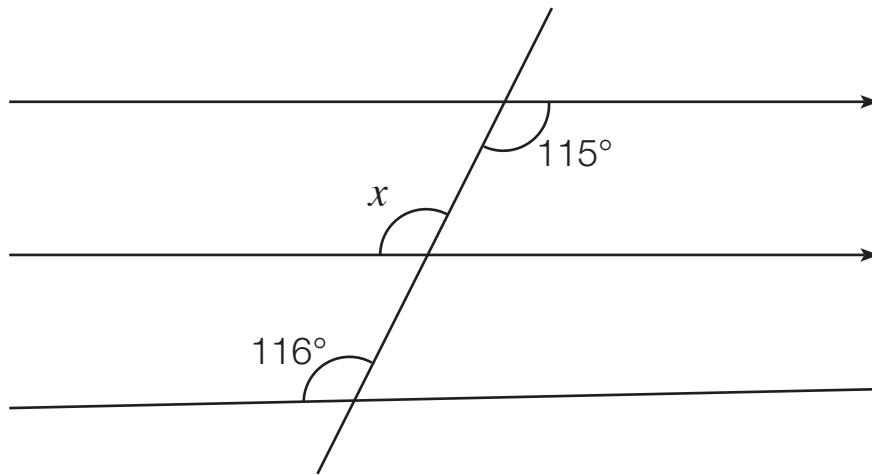
1 mark

$$42 = 15q - 21$$

 $q =$ 

2 marks

3



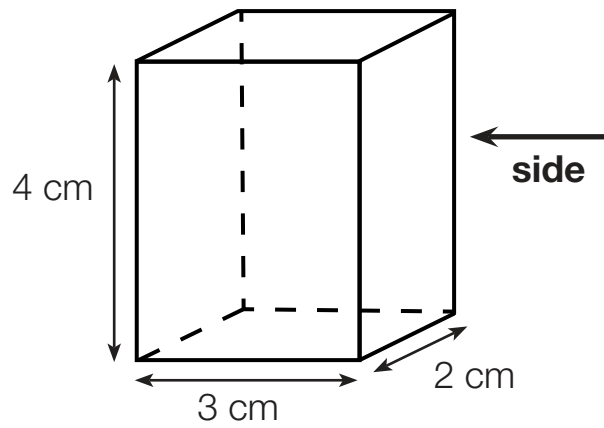
Write down the size of the angle marked  $x$ .

Give a reason for your answer.

2 marks

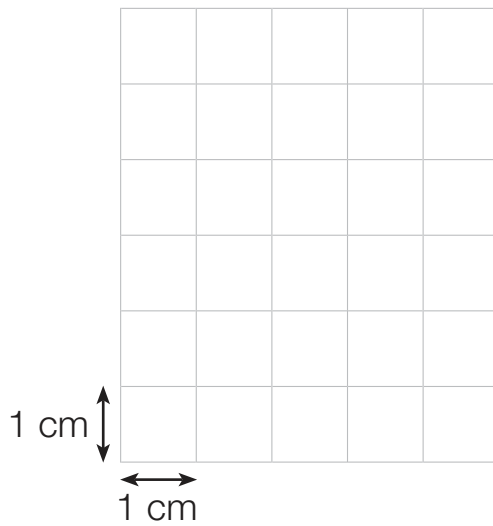
4

Here is a cuboid.

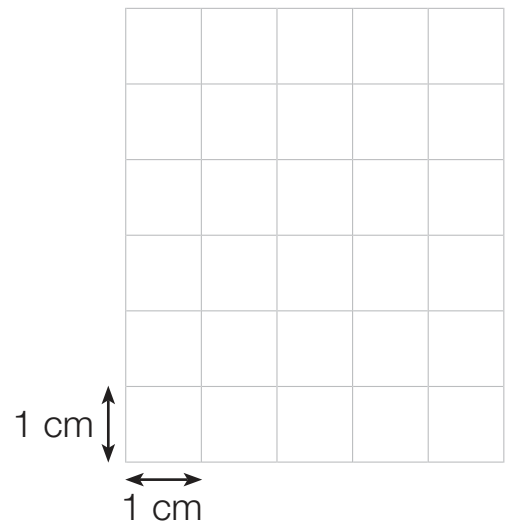


On the grid, draw the plan view and side elevation of the cuboid.

plan



side



5

Find the highest common factor of 24 and 64

2 marks

Find the lowest common multiple of 24 and 64

2 marks

6

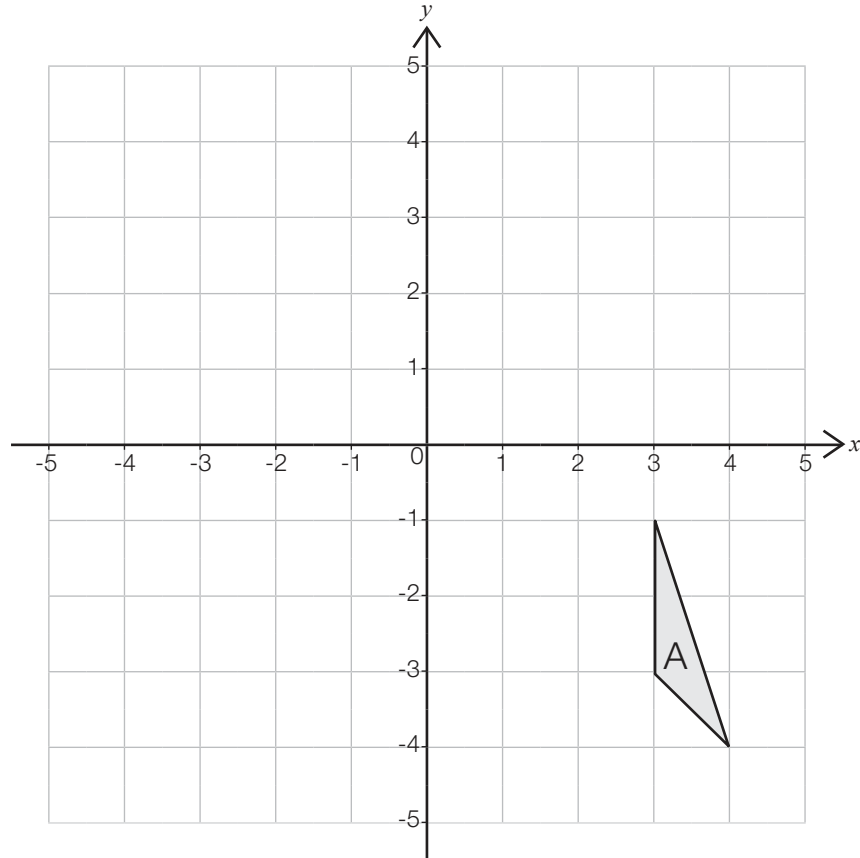
Annie scored 29 out of 35 marks in a test.

What percentage of the test did Annie get correct?

Give your answer to 1 decimal place.

2 marks

7



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

Label this shape B.

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

2 marks

2 marks

8

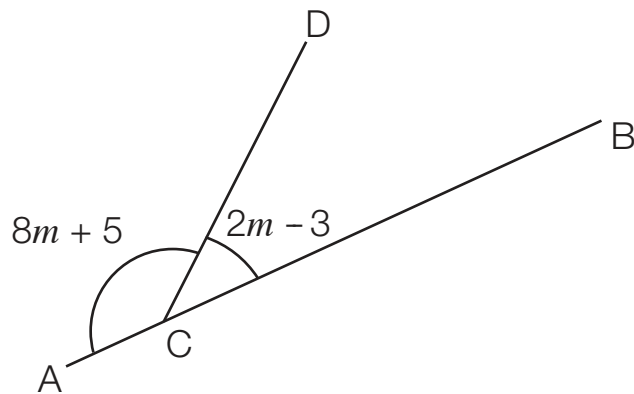
Expand and simplify.

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

2 marks

9

Line segments AB and CD are straight.



Work out the size of angle BCD.

Sourced from SATs-Papers.co.uk • <https://www.SATs-Papers.co.uk>

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

**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.

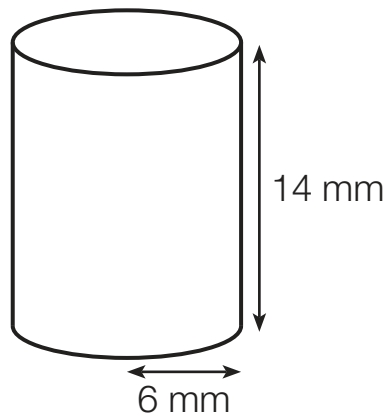
Company	First day's hire	Additional day's hire	Delivery fee
<b>Carpet Co</b>	£25.67	£18.99	Nil
<b>Clean Carpets</b>	£19.23	£19.23	£10.99

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.



Work out the volume of the cylinder.

Give units with your answer.

13

The straight line with equation  $y = \frac{9x - 5}{8}$  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%.

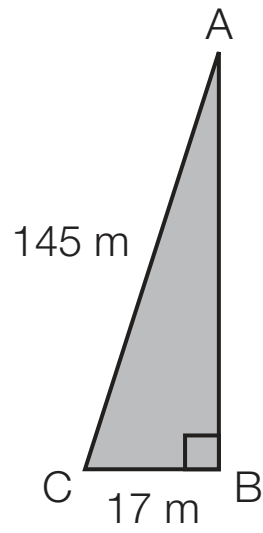
The sale price of the bicycle is £585

Work out the normal price of the bicycle.

£

3 marks

15



$$AC = 145 \text{ m}$$

$$BC = 17 \text{ m}$$

Work out the perimeter of triangle ABC.

3 marks