Spring Assessment B

Year 9

Mathematics

Higher: No calculator allowed

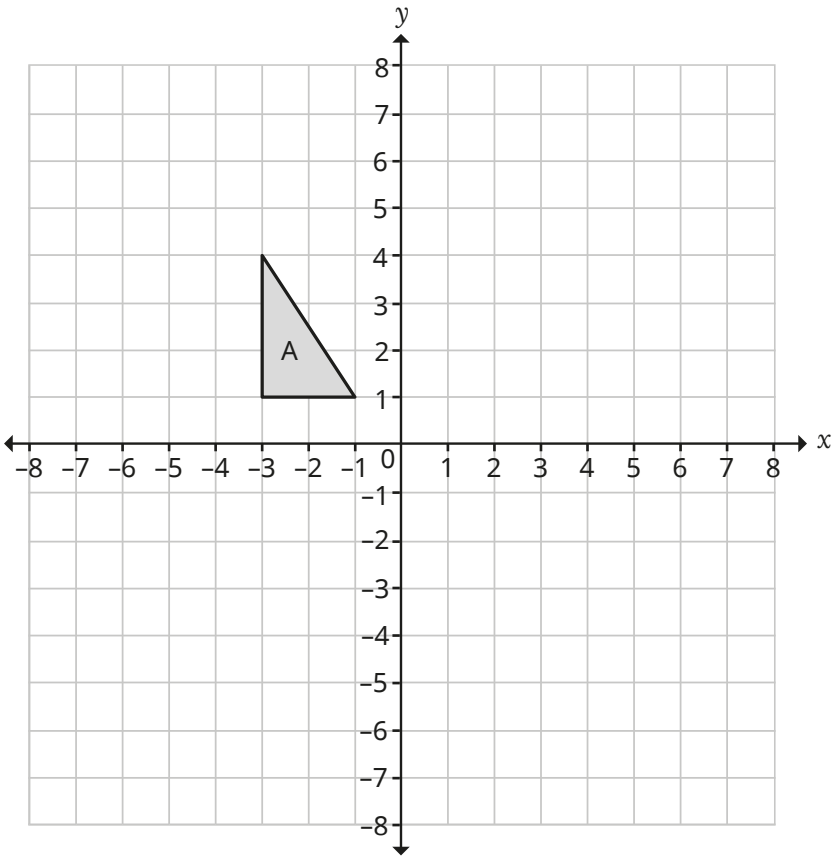
Time allowed: 45 minutes

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 Triangle A is shown on the grid.



Translate triangle A by the vector $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$.

Label the new triangle B.

2 marks

Reflect triangle B in the line $x = -1$

Label the new triangle C.

2 marks

2 The straight line with equation $y = ax - 3$ goes through the point (2, 11).

Work out the value of a.

$a =$

2 marks

3 30% of a number is 900

Find one third of the number.

2 marks

Express 40 as a percentage of 8000

%

2 marks

4 A number is increased by 20% and the result is decreased by 10%.

What is the overall effect on the original number?

Circle your answer.

increased by 10% **decreased by 10%**

increased by 8% **decreased by 8%**

1 mark

Would the result have been the same or different if the number had been decreased by 20% and then increased by 10%?

Circle your answer.

same **different**

Explain your answer.

1 mark

5 Eva invests £1000 at 2% simple interest for 5 years.

Amir invests £1000 at 5% compound interest for 2 years.

Who earns more interest?

You must show your working.

3 marks

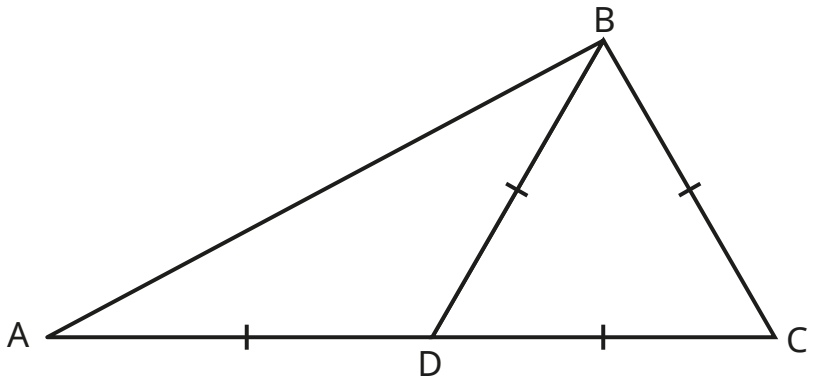
6 Which bag of potatoes is better value for money?

You must show your working.

3 marks

7 In the diagram, D is a point on straight line ADC.

ABC, ABD and BCD are triangles.



Show that ∠BAD = 30°

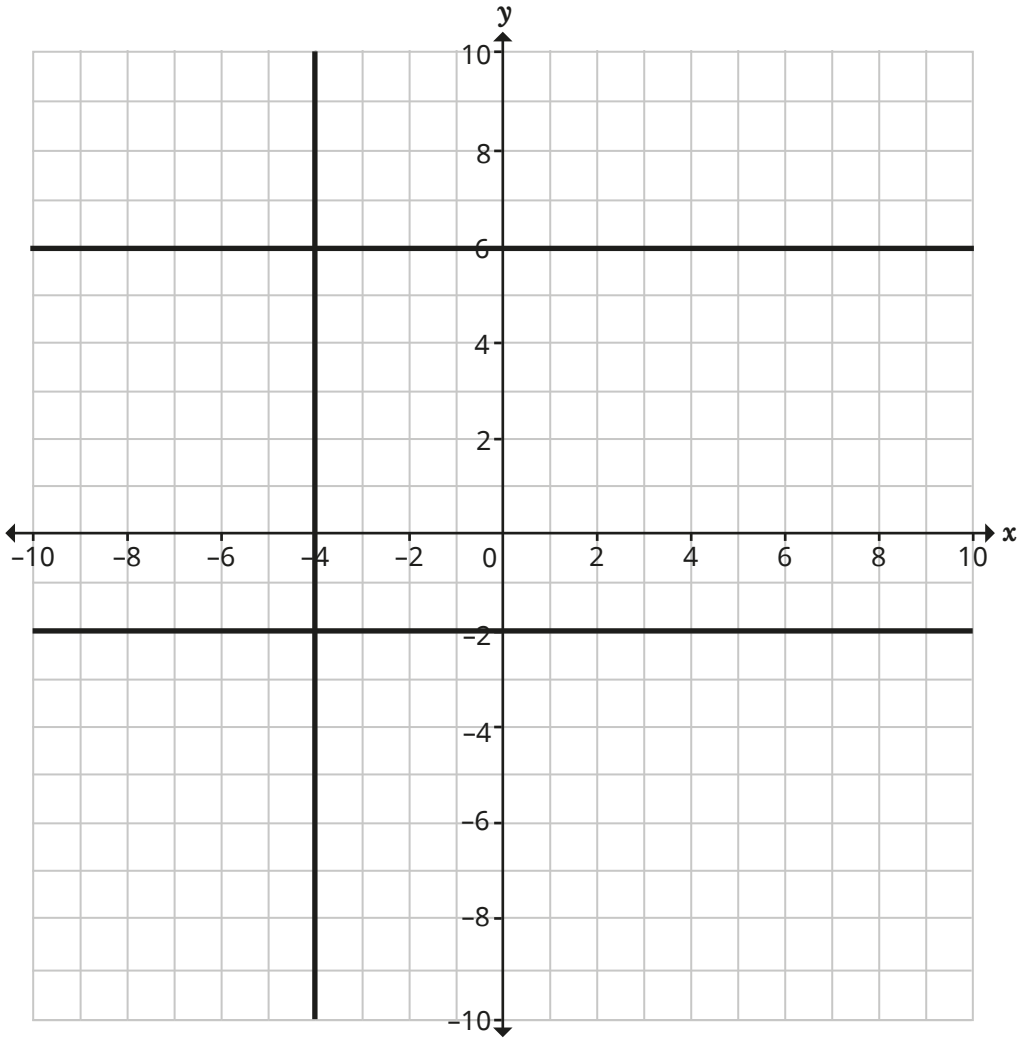
3 marks

8 Circle true or false for each statement.

The diagonals of a rhombus bisect each other.	**true** **false**
The diagonals of a parallelogram are equal in length.	**true** **false**
The diagonals of a rectangle bisect the angles of the rectangle.	**true** **false**
The diagonals of a kite meet at right angles.	**true** **false**

2 marks

9 The diagram shows three straight lines on a grid.



A fourth straight line can be added to form a rectangle with an area of 80 square units.

Add this line to the diagram.

What is the equation of the line?

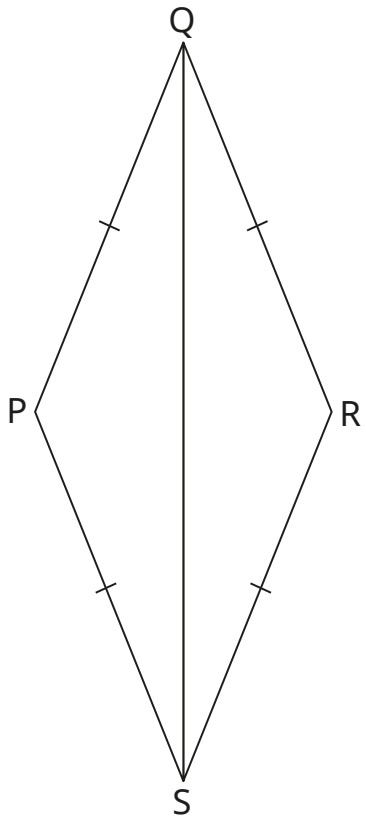
_____

2 marks

10 Expand and simplify $(x + 2)(x + 3)(x + 5)$.

3 marks

11 In the diagram, PQ = QR = RS = SP.



Prove that triangles PQS and QRS are congruent.

3 marks

12 Work out -7^3

1 mark

Circle the rational numbers.

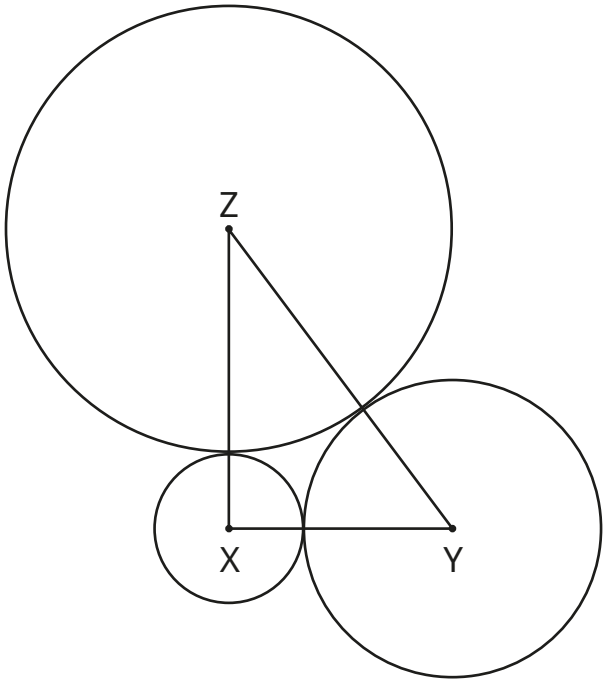
0.3 $\frac{17}{5}$ $\sqrt{8}$ $\sqrt[3]{-8}$

2 marks

Write $\sqrt{80}$ in simplest surd form.

2 marks

13 Three circles, with centres X, Y and Z, are arranged as shown.



The diameters of the circles with centres X, Y and Z are in the ratio 1 : 2 : 3

The diameter of the circle with centre X is 16 cm.

Determine whether triangle XYZ is right-angled.

Show working to justify your answer.

4 marks

END OF TEST

BLANK PAGE

Please do not write on this page.