

## Example Reasoning Materials – Year 6

11 1

Circle the number that is closest to 50

50.6

49.9

49.08

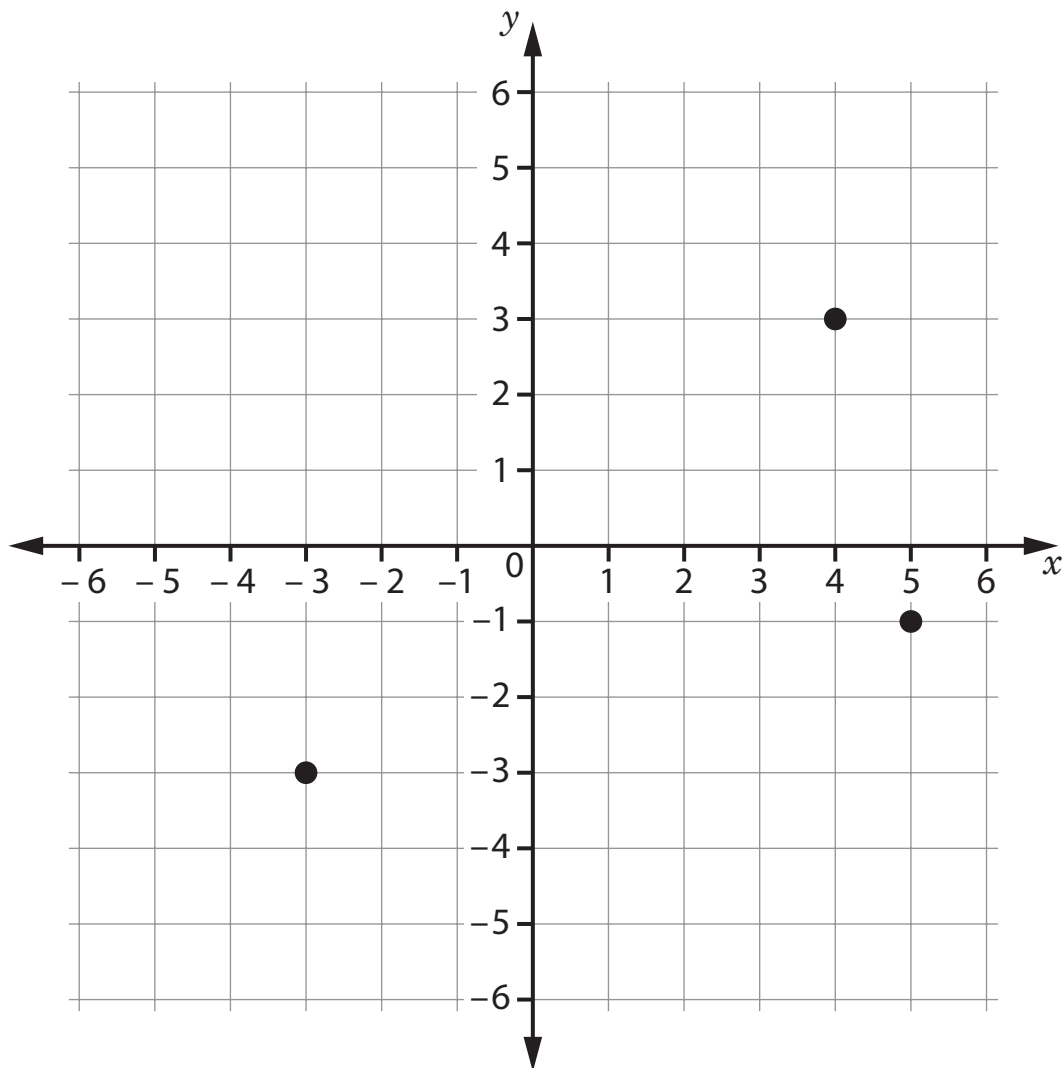
50.07



1 mark

11 2

Three vertices of a **rectangle** are plotted on this coordinate grid.



What are the coordinates of the fourth vertex of the rectangle?

(      ,      )



1 mark

# Example Reasoning Materials – Year 6

(Please note that due to the volume of materials, the published mark schemes and diagnostic commentaries will be in separate guides.)

## Mark scheme for Reasoning Test

1

PoS  
F

*Read, write, order and compare numbers with up to three decimal places*

1m

Award **1 mark** for:

► the correct number circled as shown:

50.6                      49.9  
49.08                      50.07

**Accept:**

► any other clear way of indicating the correct number, such as underlining or ticking

**Do not accept:**

► if additional incorrect numbers are circled

II 2

**PoS**  
**P**

Describe positions on the full co-ordinate grid (all four quadrants); and  
Use the properties of rectangles to deduce related facts and find missing lengths and angles

1m

Award **1 mark** for:

➤  $(-4, 1)$

**Accept:**

➤ a correct answer written on the diagram, with or without brackets

**Do not accept:**

➤ the fourth vertex marked in the correct position on the diagram without correct coordinates

**Diagnostic commentary**



Three vertices of a **rectangle** are plotted on this coordinate grid.



What are the coordinates of the fourth vertex of the rectangle?

$( -4 , 1 )$

Diagnostic commentary	
Correct	1 mark – 24%
Overview of performance	<p>This question assesses pupils' ability to describe positions on a full coordinate grid having completed the vertices of a rectangle. It is aimed at HA pupils so unsurprisingly was found particularly difficult by MA and LA pupils. HA pupils also found it challenging with just over half of them giving the correct response. Describing positions on the full coordinate grid is introduced for the first time in Year 6 and this is likely to be why pupils found it difficult in an assessment early in the school year.</p> <p><b>Inaccurately locating the rectangle's fourth vertex at <math>(-3, 3)</math> or <math>(-4, 2)</math></b></p> <p>The most common incorrect responses given by MA and HA pupils were <math>(-3, 3)</math> and <math>(-4, 2)</math>. Seven per cent of pupils in each of these achievement groups made this error suggesting that pupils had more difficulty accurately identifying where the fourth vertex of the rectangle was than understanding how to write coordinates. Very few pupils across all three achievement groups gave the response <math>(1, -4)</math> supporting the idea that generally pupils did not have difficulties in writing the coordinates the right way around.</p>
Middle achieving pupils	<p>1 mark – 18%</p> <p><b>Inaccurately locating the rectangle's fourth vertex at <math>(-3, 3)</math> or <math>(-4, 2)</math> (7%)</b></p>
Higher achieving pupils	<p>1 mark – 57%</p> <p><b>Inaccurately locating the rectangle's fourth vertex at <math>(-3, 3)</math> or <math>(-4, 2)</math> (7%)</b></p>