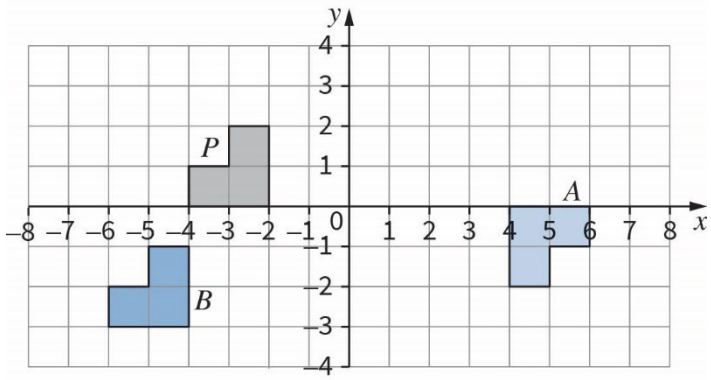
Oxford Revise | AQA GCSE Maths Higher | Answers

Chapter 23 Transformations

Question	Answer	Extra information	Marks
23.1 (a) and (b)		Shape *A* drawn with correct size and orientation Shape *B* drawn with correct size and orientation	1 1
23.2	Reflection in the line $y = x$	Described as a reflection Correct mirror line	1 1

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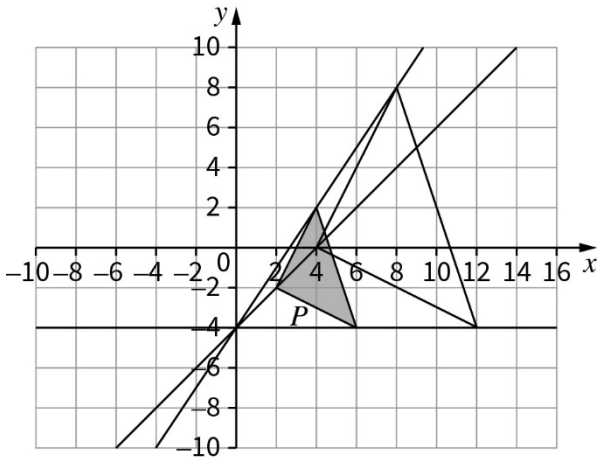
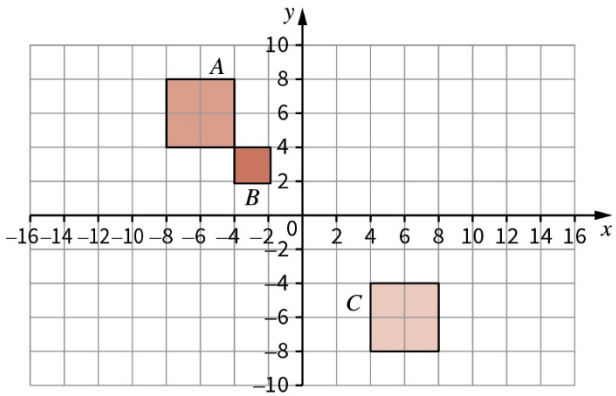
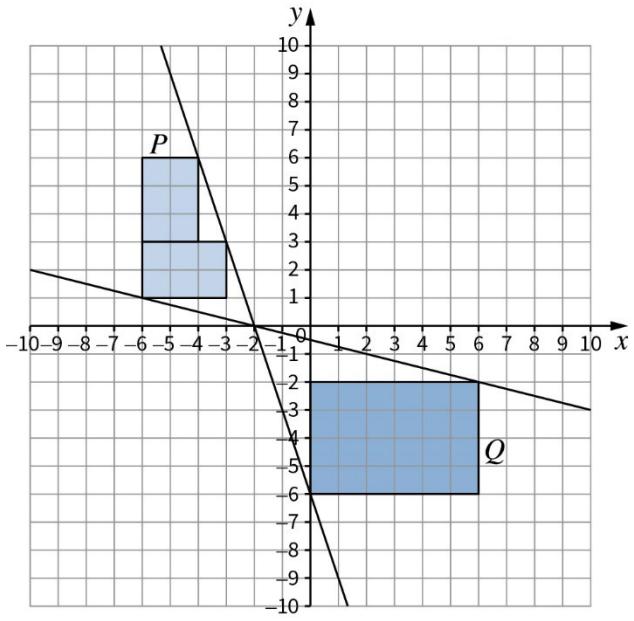
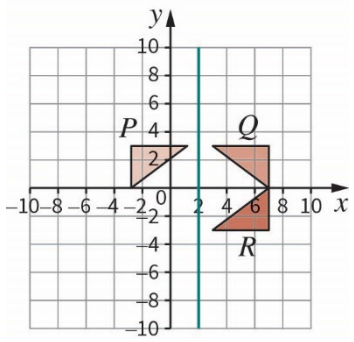
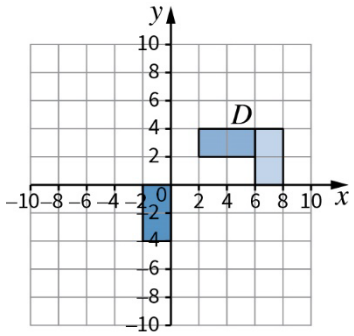
Question	Answer	Extra information	Marks
23.3		1 mark for correct size after enlargement	3
23.4 (a) and (b)		2 marks for completely correct shape *B* 2 marks for completely correct shape *C*	2 2

Question	Answer	Extra information	Marks
23.4 (c)	Any correct transformation, eg. a reflection in the line $y = x$, translation by vector $\begin{pmatrix} 12 \\ 12 \end{pmatrix}$	Any two correct answers Bonus mark for both correct	2 1
23.5		Correct orientation after rotation Fully correct rotation Correct size after enlargement Fully correct enlargement	1 1 1 1
23.6	Enlargement, scale factor -2, about $(0, 0)$	Enlargement scale factor centre of rotation	1 1 1

Question	Answer	Extra information	Marks
23.7	 Rotation of $180°$ about $(2, 0)$	Rotation $180°$ About $(2, 0)$ If no marks scored, award 1 mark for a correct reflection seen for *Q* or *R*	1 1 1
23.8	 The point with coordinates $(6, 4)$ is invariant	Complete method to show the transformations with the image correctly placed. $(6, 4)$	1 1

<table>
<tr><th>Question</th><th>Answer</th><th>Extra information</th><th>Marks</th></tr>
<tr><td>23.9</td><td>Line L has a gradient of -3
Putting $3x + y = 0$ into $y = mx + c$ form gives $y = -3x$
This line also has a gradient of -3 so Sajid is correct</td><td>Rearrange $3x + y = 0$ to give $y = -3x$
Correct explanation</td><td>1
1</td></tr>
<tr><td>23.10 (a)</td><td><table>
<tr><th>Length (x cm)</th><th>Frequency, f</th><th>Midpoint</th><th>$f \times$ Midpoint</th></tr>
<tr><td>$0 < x \leq 8$</td><td>50</td><td>4</td><td>200</td></tr>
<tr><td>$8 < x \leq 16$</td><td>30</td><td>12</td><td>360</td></tr>
<tr><td>$16 < x \leq 24$</td><td>20</td><td>20</td><td>400</td></tr>
<tr><td>Total</td><td>100</td><td></td><td>960</td></tr>
</table></td><td>20 or 360 or 90
Fully correct table</td><td>1
1</td></tr>
<tr><td>23.10 (b)</td><td>$0 < x \leq 8$</td><td></td><td>1</td></tr>
<tr><td>23.10 (c)</td><td>Estimated mean length = $960 \div 100 = 9.6$ cm</td><td>Divide total in the last column by 100
9.6 cm</td><td>1
1</td></tr>
</table>