

Grade 8 geometry test

NAME	DATE	SCORE / 6
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Answer each question. Show your work.

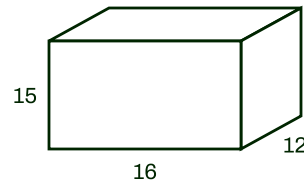
- 1** A right triangle has legs of 3 and 4 units. What is the length, in units, of the hypotenuse?

- 2** A right triangle has a hypotenuse of 17 m and one leg of 8 m. What is the length, in metres, of the other leg?

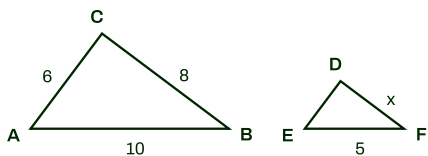
- 3** In triangle ABC, angle A measures 80° and angle B measures 45° . In triangle DEF, angle D measures 45° and angle E measures 80° . Are triangles ABC and DEF similar, and why?

- ☐ No: the equal angles are listed in a different order
- ☐ No: side lengths are needed to decide
- ☐ Yes: two pairs of angles are equal
- ☐ No: only one pair of angles is equal

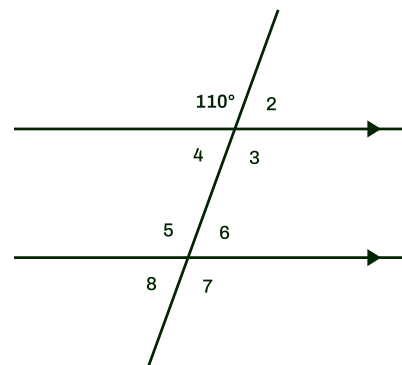
- 4** The box below is a rectangular prism with edges measured in centimetres. What is the length, in centimetres, of a straight line inside the box from a bottom corner to the opposite top corner?



- 5** Triangle ABC is similar to triangle EFD, with the vertices in matching order. The lengths are in centimetres. What is the length x , in centimetres?



- 6** In the picture, two parallel lines are cut by a transversal. The measure of one angle is shown, and the others are numbered. What is the measure, in degrees, of angle 5?



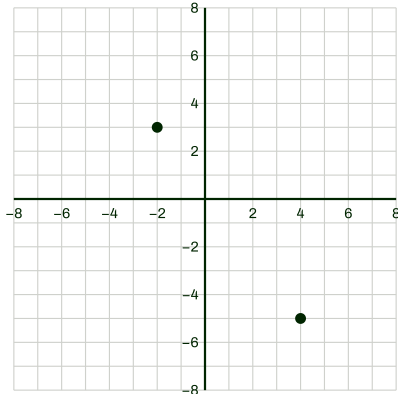
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Answer each question. Show your work.

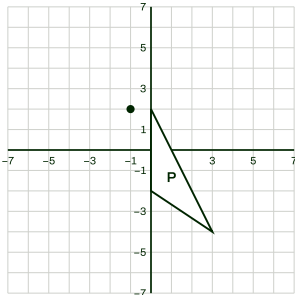
7

The points $(-2, 3)$ and $(4, -5)$ are plotted on the coordinate plane below. What is the distance, in units, from $(-2, 3)$ to $(4, -5)$?



8

Triangle P, with vertices $(3, -4)$, $(0, -2)$ and $(0, 2)$, and the point $(-1, 2)$ are shown on the coordinate plane below. Triangle P is rotated 90° clockwise about the point $(-1, 2)$. What are the coordinates of the image of the vertex $(0, 2)$?

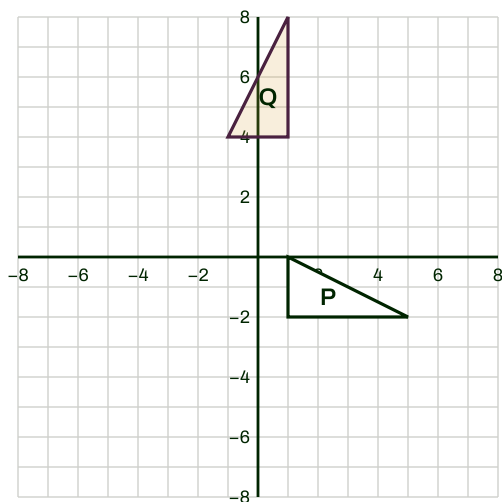


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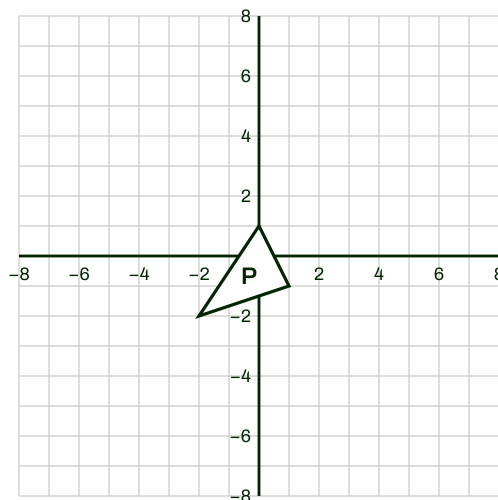
Answer each question. Show your work.

- 9 Triangle P and triangle Q are drawn on the grid below. Which motions map P onto Q?



- ☐ Rotate 90° counterclockwise about the origin, then translate 1 left and 3 up
☐ Rotate 180° about the origin, then translate 1 left and 3 up
☐ Reflect in the x-axis, then translate 1 left and 3 up
☐ None: P and Q have different side lengths

- 10 Triangle P, with vertices $(1, -1)$, $(-2, -2)$ and $(0, 1)$, is drawn on the coordinate plane below. Triangle P is dilated by a scale factor of 3, with the centre of dilation at the origin. What are the vertices of the image?



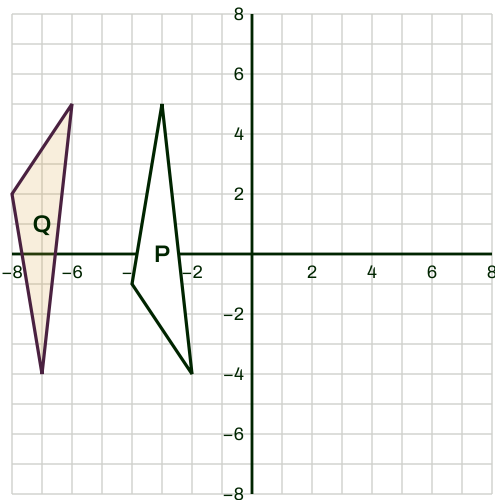
- ☐ $(3, -1)$, $(-6, -2)$, $(0, 1)$
☐ $(3, -3)$, $(-6, -6)$, $(0, 3)$ ☐ $(4, 2)$, $(1, 1)$, $(3, 4)$
☐ $(1, -3)$, $(-2, -6)$, $(0, 3)$

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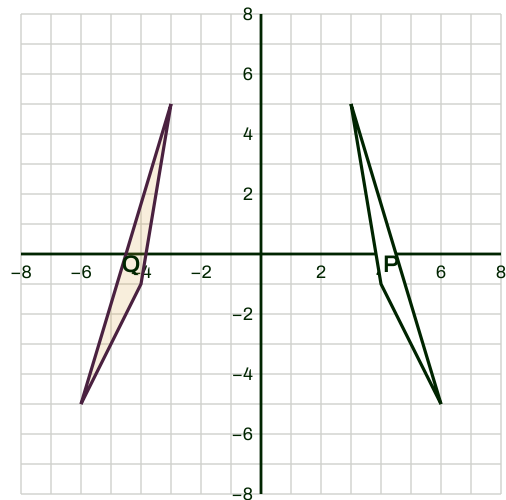
Answer each question. Show your work.

- 11** Triangle P and triangle Q are drawn on the coordinate plane below. No single translation, reflection or rotation maps P onto Q. Which two moves, in order, map P onto Q?



- ☐ Reflect across the x-axis, then translate 4 right and 1 up
- ☐ Reflect across the y-axis, then translate 4 left and 1 up
- ☐ Reflect across the x-axis, then translate 4 left and 1 up
- ☐ Rotate 180° about the origin, then translate 4 left and 1 up

- 12** Triangle P was reflected across the y-axis to make triangle Q, as shown on the coordinate plane below. Which statement about triangles P and Q is true?



- ☐ Side lengths stay the same; angle sizes, orientation and position change
- ☐ Side lengths, angle sizes and orientation stay the same; position changes
- ☐ Side lengths, angle sizes, orientation and position all stay the same
- ☐ Side lengths and angle sizes stay the same; orientation and position change

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1	5	2	15	3	Yes: two pairs of angles are equal
4	25	5	4	6	110
7	10	8	$(-1, 1)$	9	Rotate 90° counterclockwise about the origin, then translate 1 left and 3 up
10	$(3, -3), (-6, -6), (0, 3)$	11	Reflect across the x-axis, then translate 4 left and 1 up	12	Side lengths and angle sizes stay the same; orientation and position change