Check
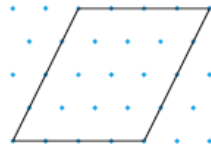
3. Describe the rotational symmetry and line symmetry of each shape.
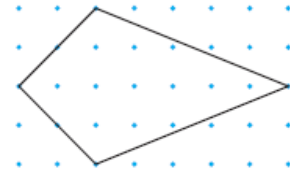
a) a parallelogram   **b)** a rhombus   **c)** an isosceles trapezoid   **d)** a kite

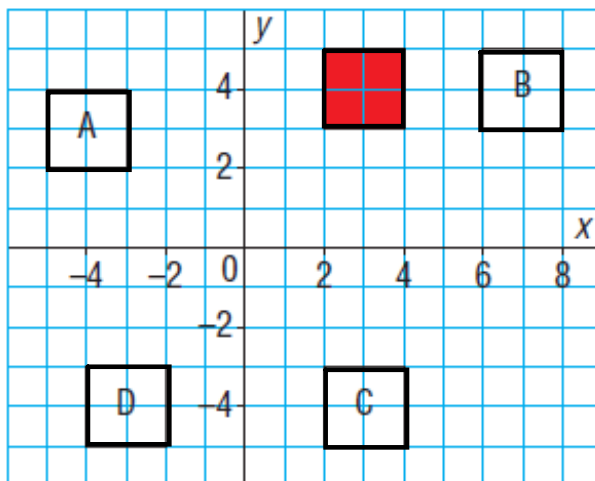**5.** Describe the symmetry of each face of a die. Copy each face. Mark the centre of rotation and the lines of symmetry.
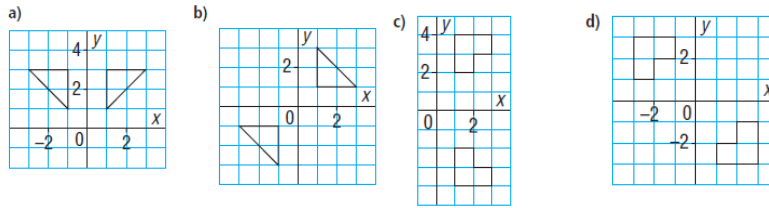
6. Look at the squares below.

Which of squares A, B, C, and D are related to the red square:

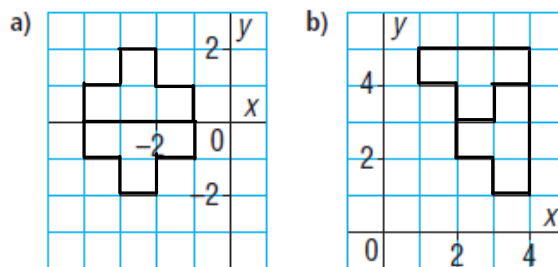**a)** by rotational symmetry about the origin?

b) by line symmetry?

1

7. For each diagram, determine whether the
two polygons are related by line symmetry,
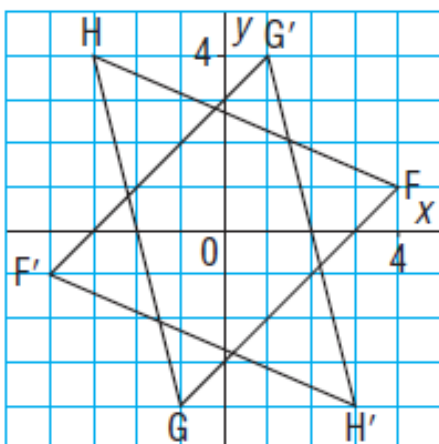by rotational symmetry about the origin, or
by both.

a)

b)

c)

d)

8. For each diagram, determine whether the
two octagons are related by line symmetry,
by rotational symmetry, by both types of
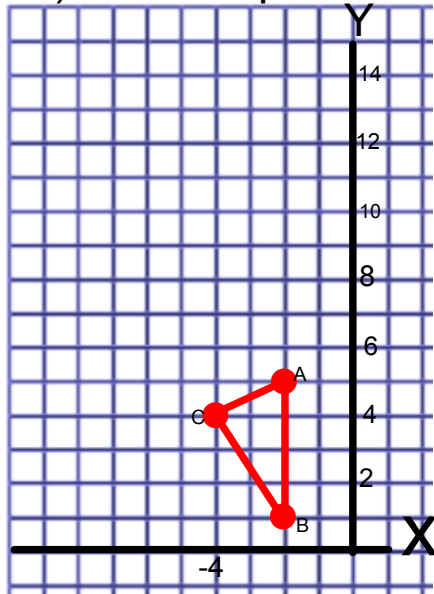symmetry, or by neither.

a)

b)

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9. Triangle F′G′H′ is the image of ΔFGH after
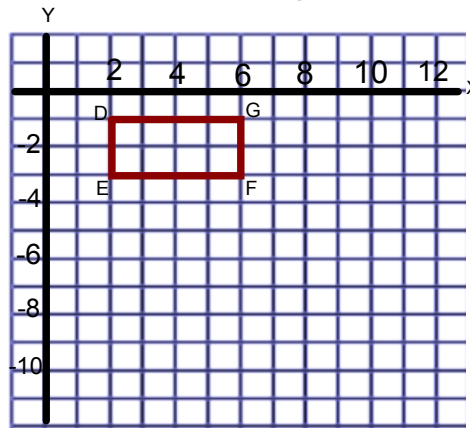a rotation about the origin. Identify any
symmetry.

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11. Copy each shape on grid paper.
- Draw the image after the translation given.
- Label each vertex with its coordinates.
- Does each diagram have line and rotational symmetry?

If your answer is yes, describe the symmetry.
If your answer is no, describe how you know.

a) 6 units up

b) 4 units right

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12. **Assessment Focus**

a) On a grid, draw $\triangle CDE$ with vertices $C(2, 3)$, $D(-2, -1)$, and $E(3, -2)$.

b) Draw the translation image $\triangle C'D'E'$ after the translation R1, U3.

c) Label all the vertices with their ordered pairs.

d) Explain why the translation does not result in line or rotational symmetry.

e) Find a translation that does result in one type of symmetry. Draw the image. How do you know the diagram has symmetry?
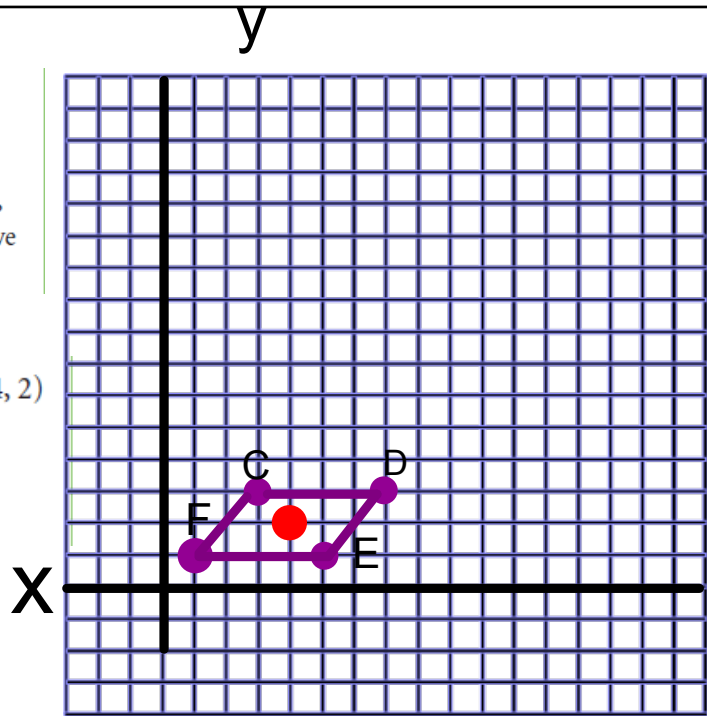
Show your work.

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3
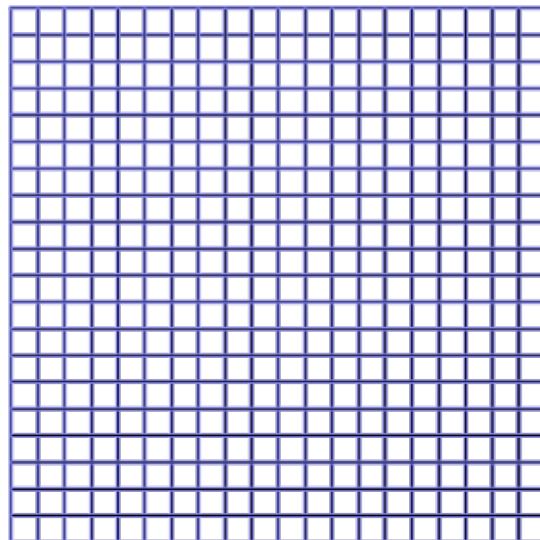
13. a) Draw the image of parallelogram CDEF after each transformation below.

b) The parallelogram and its image form a diagram. If each diagram has symmetry, describe it. If each diagram does not have symmetry, describe how you know.

i) a rotation of 90° clockwise about (4, 2)

ii) a reflection in the horizontal line through 1 on the *y*-axis

iii) a translation R4

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