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$$11(2x - 4) = -18$$

$$22x - 44 = -18$$

$$22x = 26$$

$$x = \frac{26}{22} = \frac{13}{11} = 1\frac{2}{11}$$

Rotation Notes - Part 1

Rotation:

also called **turn**

figure is turned around a fixed point

the fixed point is called the center of rotation

figures are **congruent**

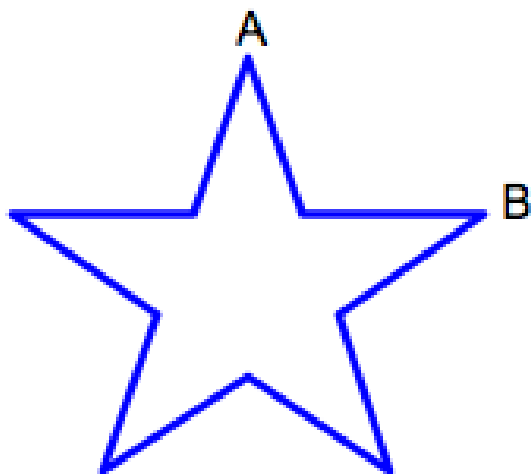
orientation is **different**

A rotation can be clockwise (right) or counterclockwise (left).

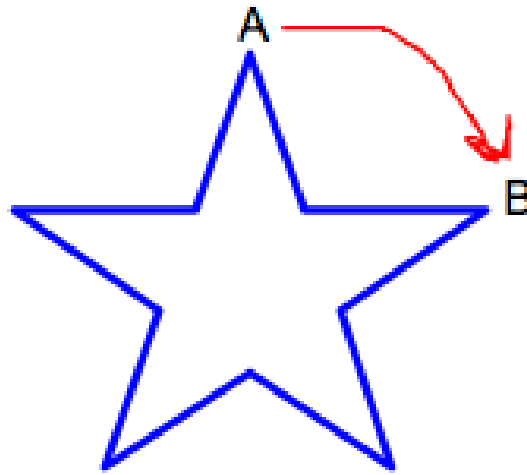
It is normally rotated 90, 180, or 270 degrees, which is a $\frac{1}{4}$ turn, $\frac{1}{2}$ turn, or $\frac{3}{4}$ turn.

Rotational Symmetry: a figure has rotational symmetry if it can be turned less than 360° about its center and still look like the original.

Example: Determine whether the star shown has rotational symmetry. If it does, what is angle of rotation?



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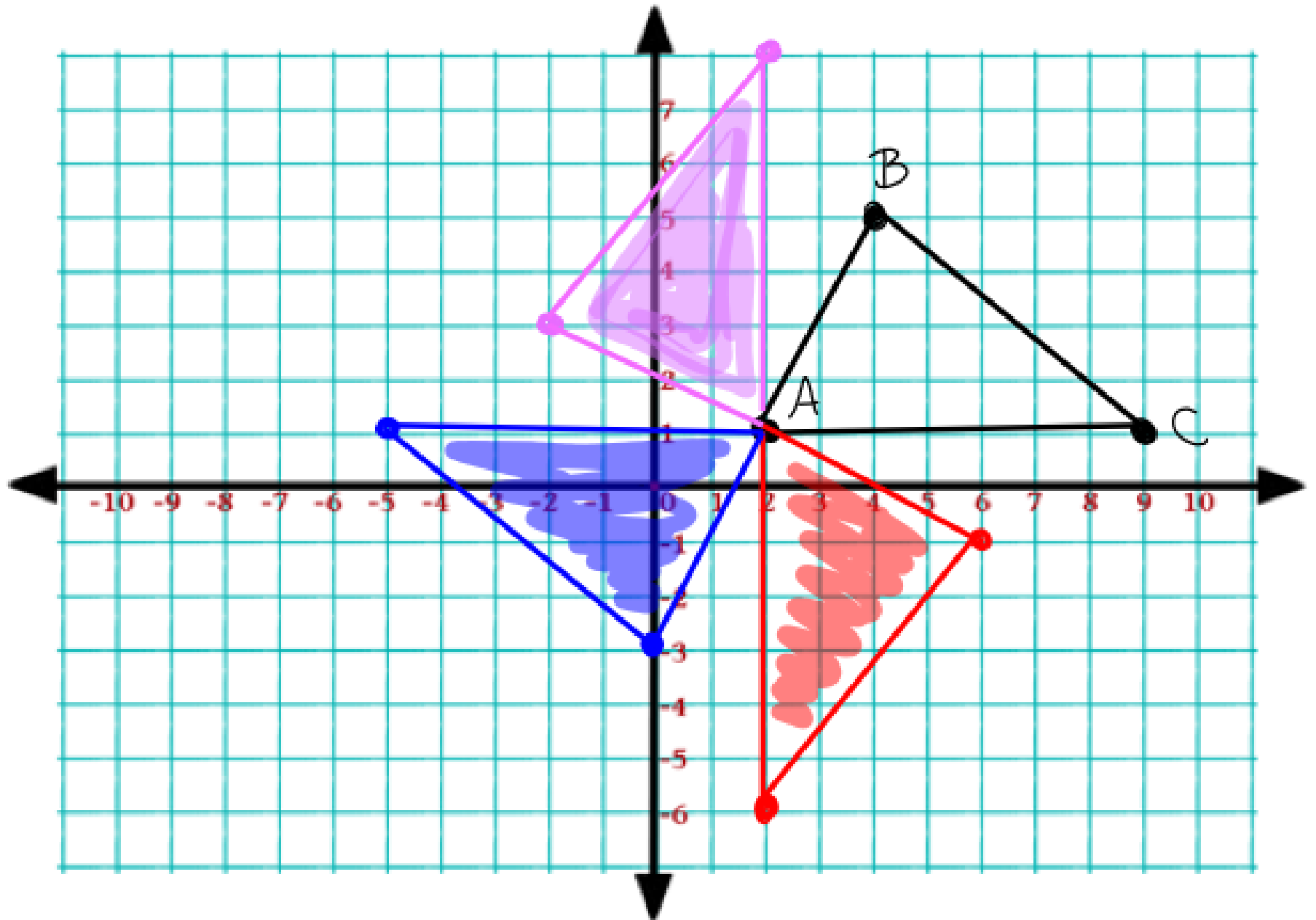


Yes, the star has rotational symmetry. Angle is 72° .

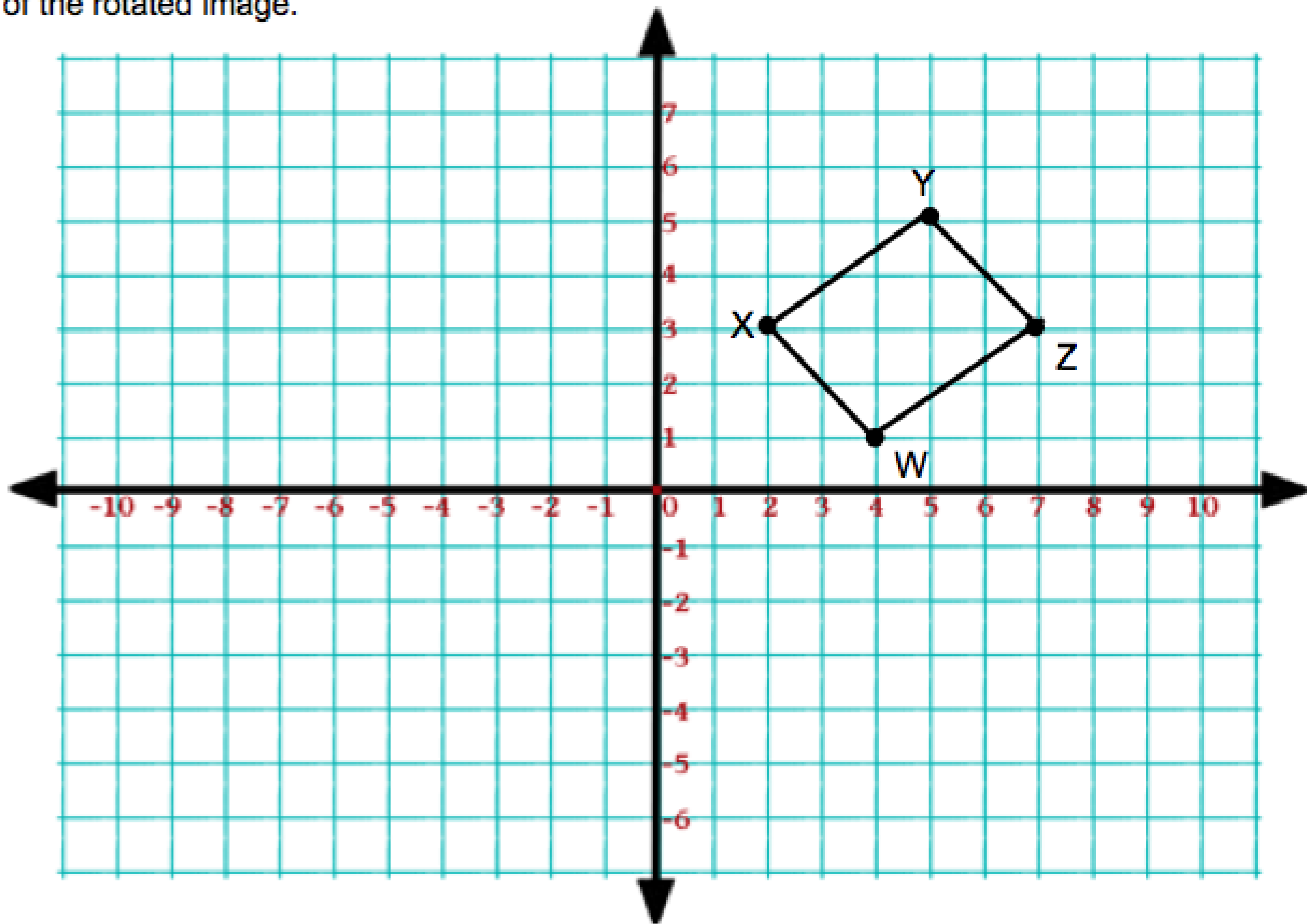
To find the angle, divide 360° by the number of points. In this case 5 points.

$$360 / 5 = 72$$

Example of a 90° rotation clockwise, a 180° rotation clockwise, and a 270° rotation clockwise about point A.



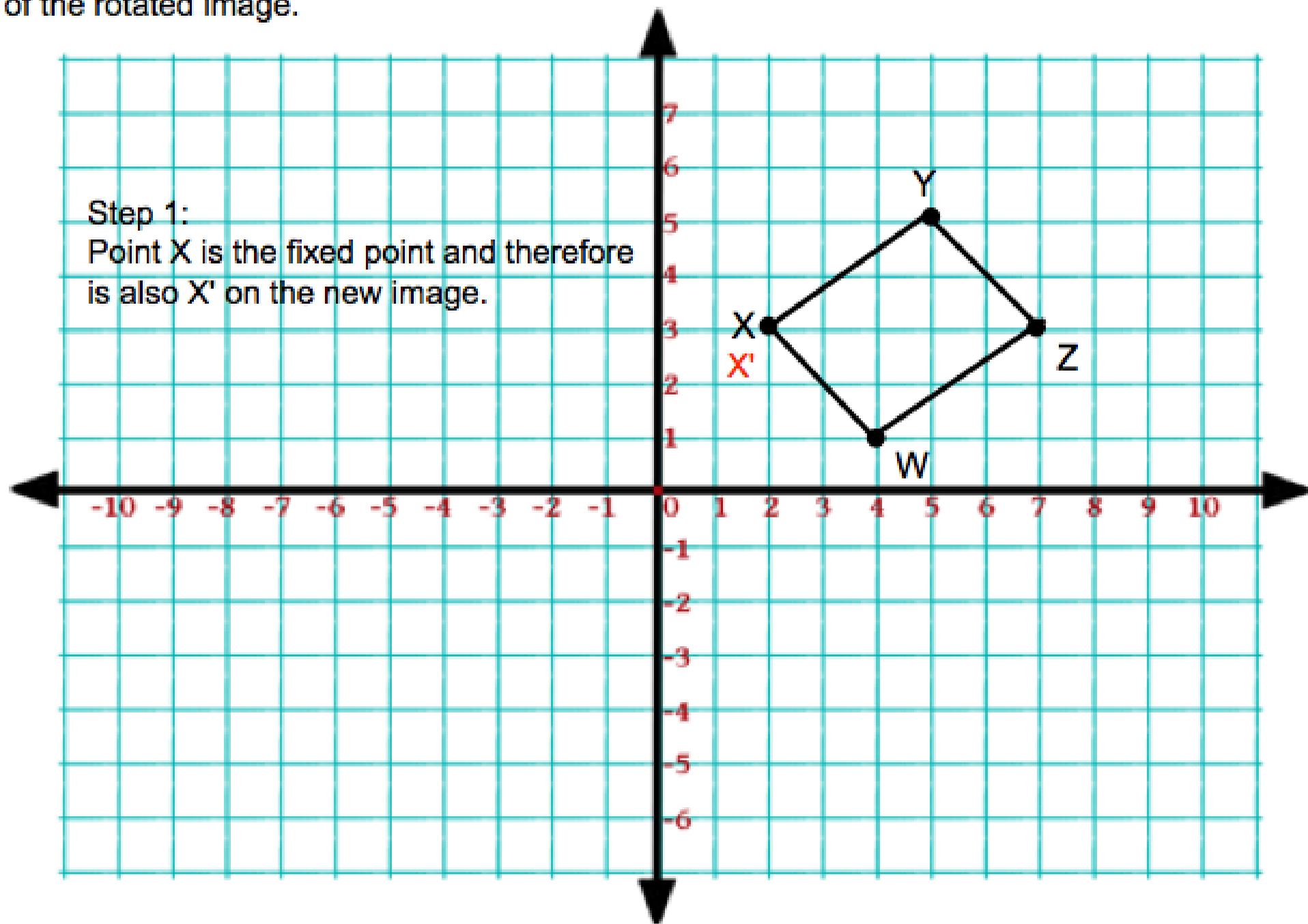
Example: Rotate the shape 90° counterclockwise about point X. Provide the ordered pairs of the rotated image.



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Step 1:

Point X is the fixed point and therefore is also X' on the new image.

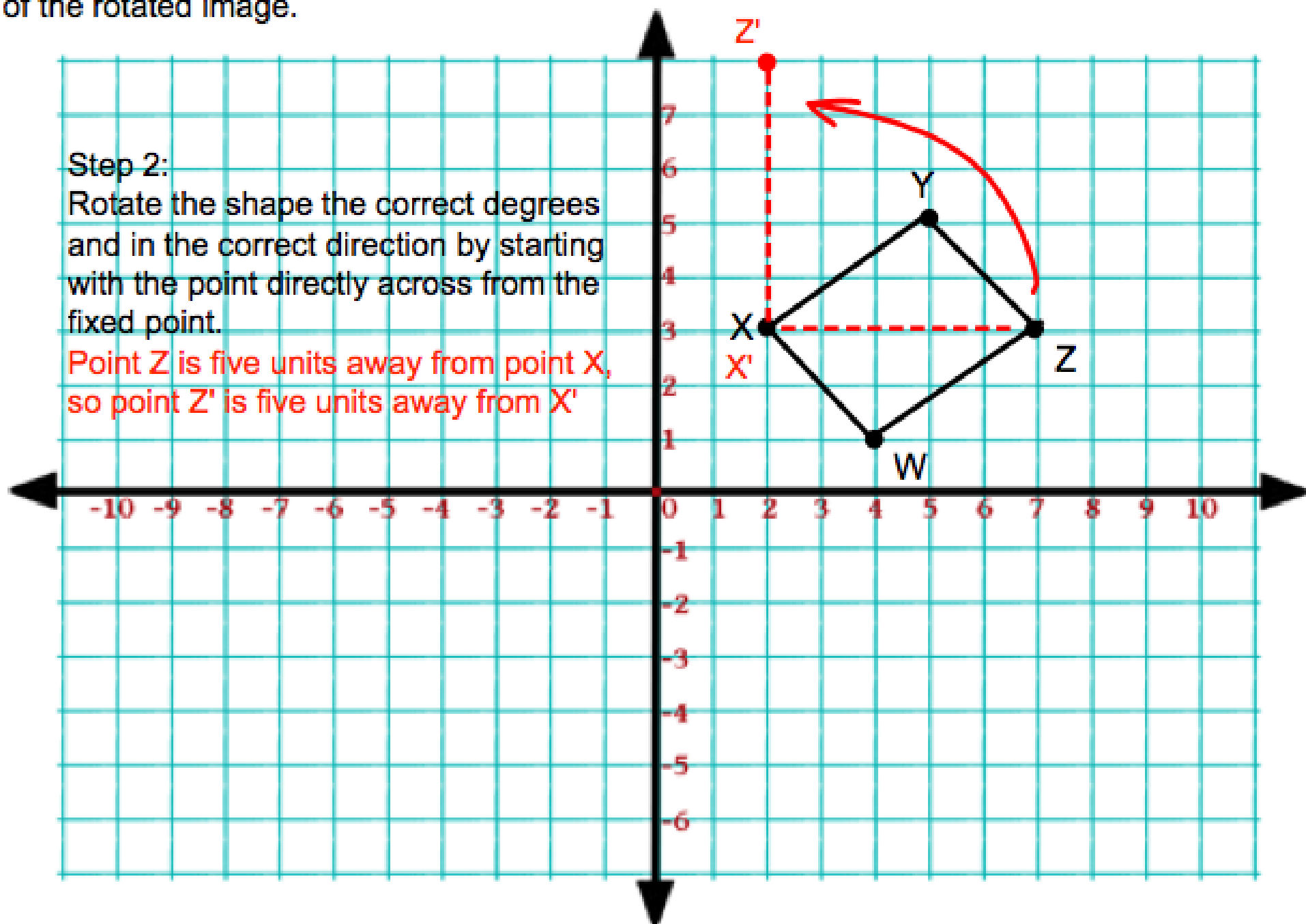


Example: Rotate the shape 90° counterclockwise about point X. Provide the ordered pairs of the rotated image.

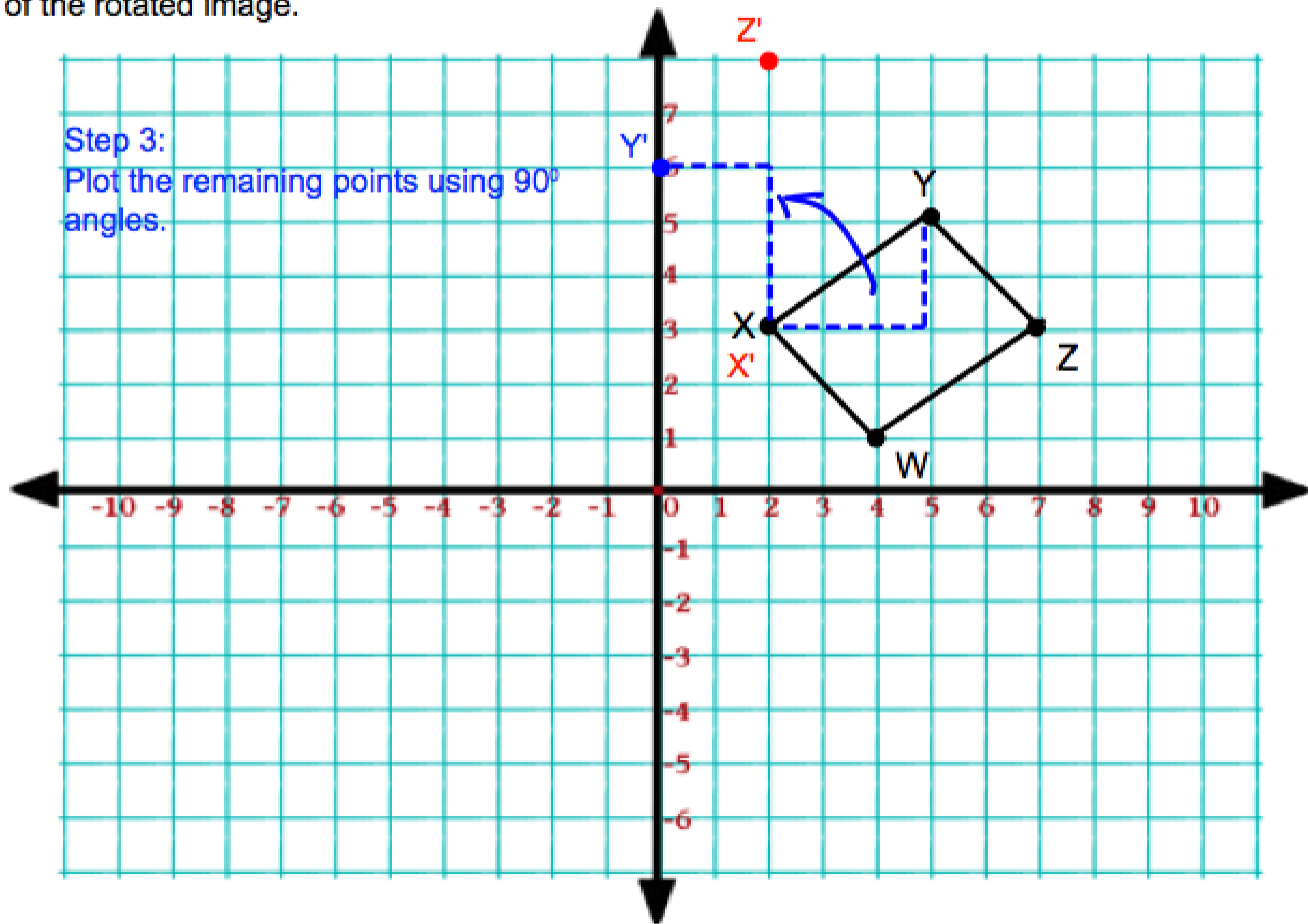
Step 2:

Rotate the shape the correct degrees and in the correct direction by starting with the point directly across from the fixed point.

Point Z is five units away from point X, so point Z' is five units away from X'



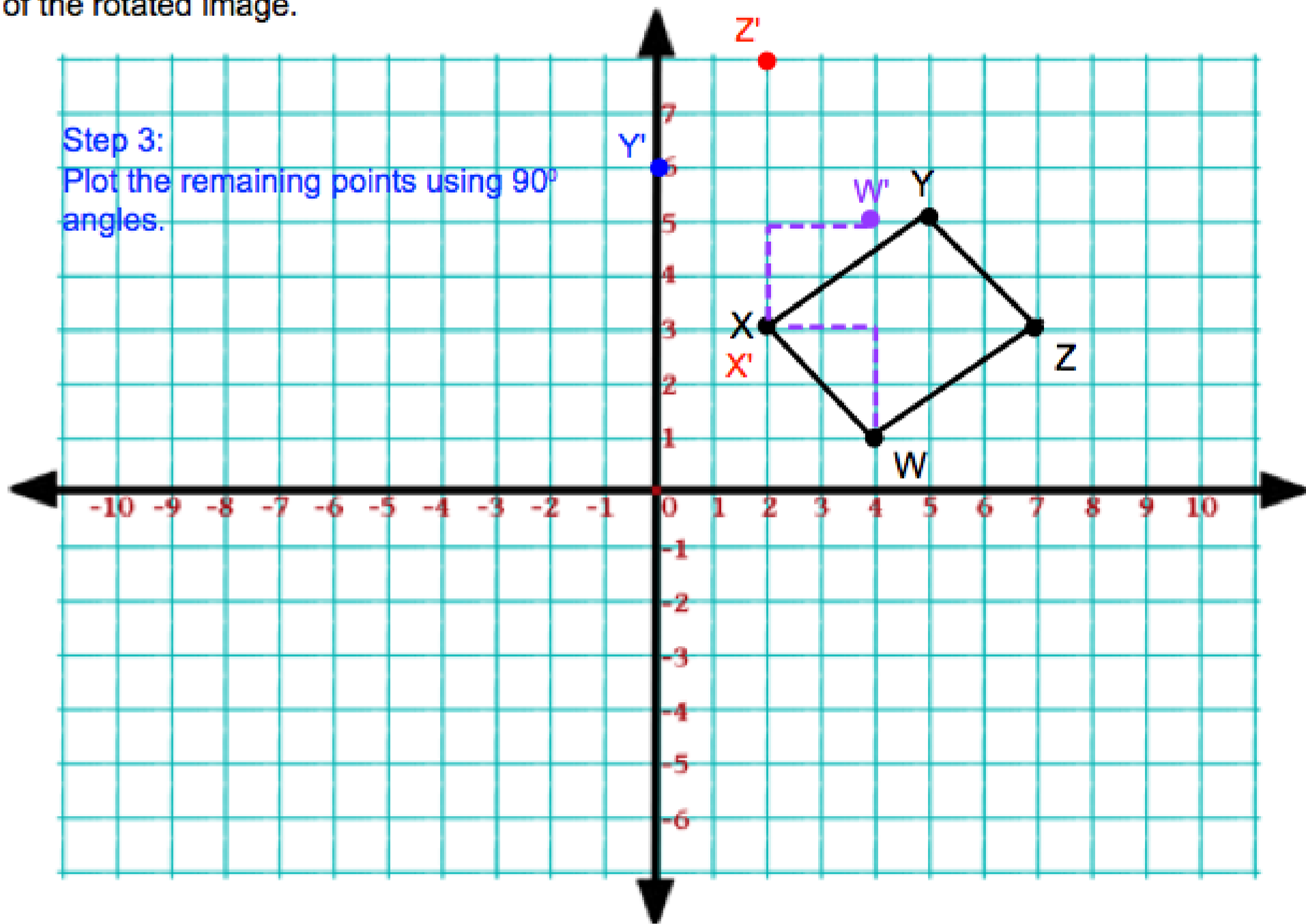
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Step 3:

Plot the remaining points using 90° angles.



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