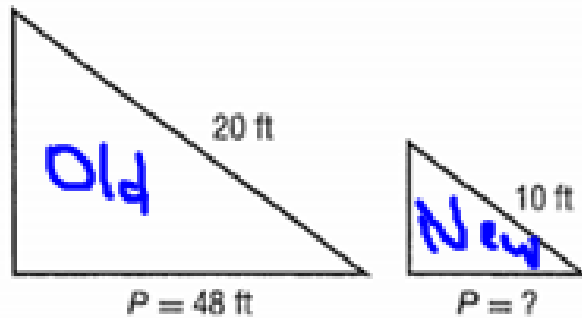# Get out your homework and have it ready to check. Test on Thursday!

Classwork - Test Review Day 1

For each pair of similar figures, find the perimeter of the second figure. LABEL
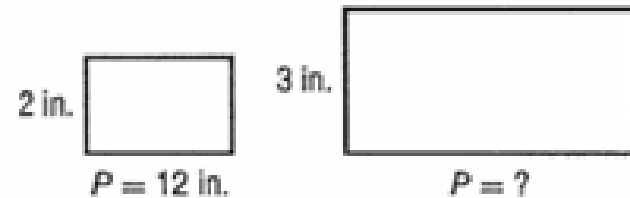
1.

Old

20 ft

New

10 ft

$P = 48$ ft

$P = ?$

$$48 \cdot \frac{1}{2} = 24$$

$$\frac{10}{20} = \frac{1}{2}$$

Scale Factor = $\frac{1}{2}$

$P = 24$ ft

2.

2 in.

3 in.

$P = 12$ in.

$P = ?$

$$12 \cdot \frac{3}{2} = 18$$

$$\frac{3}{2}$$

Scale Factor = $\frac{3}{2}$

$P = 18$ in

3.

10 cm

5 cm

P = 30 cm   P = ?

4.

9 in.

6 in.

P = 30 in.   P = ?
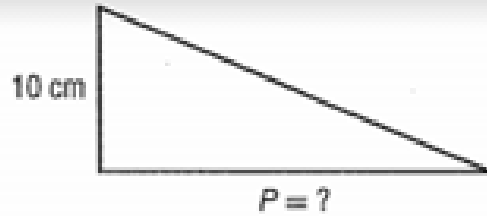
$$30 \cdot 2 = 60$$

$$\frac{10}{5} = \frac{2}{1}$$

Scale Factor = __2__ . P = __60 cm__
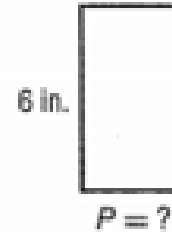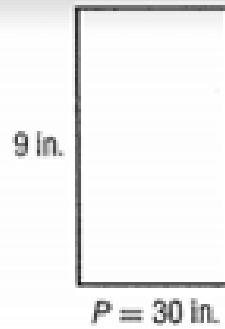
$$\frac{9}{6} = \frac{3}{2}$$

$$30 \cdot \frac{3}{2} = 45$$

Scale Factor = __~~3/2~~__   P = __~~45 in~~__

$$\frac{6}{9} = \frac{3}{3} = \frac{2}{3}$$

$$30 \cdot \frac{2}{3} = \boxed{20 \text{ in}}$$

5.

27 m

18 m

P = 135 m   P = ?
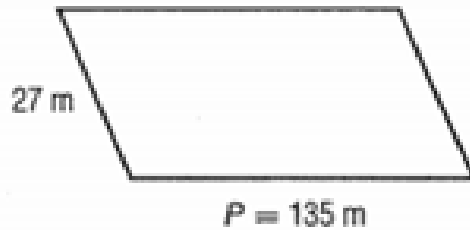
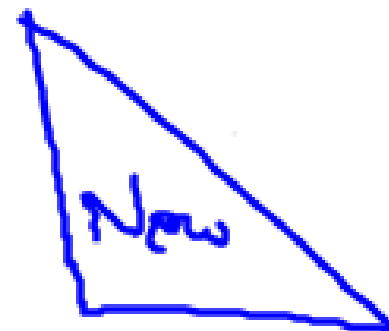$$\frac{18}{27} = \frac{2}{3}$$

$$135 \cdot \frac{2}{3} = 90$$

Scale Factor = __2/3__   P = __90 m__

6. A triangle has a side length of 4 inches and an area of 18 square inches and a larger similar triangle has a corresponding side length of 8 inches. Find the area of the larger triangle.

$$SF = \frac{8}{4} = 2 \qquad 18 \cdot 2^2 = \boxed{72 \, in^2}$$

$$\frac{New}{Old}$$

7. A rectangle has a side length of 3 feet and an area of 24 square feet. A larger similar rectangle has a corresponding side length of 9 feet. Find the area of the larger rectangle.

$$SF = \frac{9}{3} = 3 \qquad 24 \cdot 3^2 = \boxed{216 \, ft^2}$$
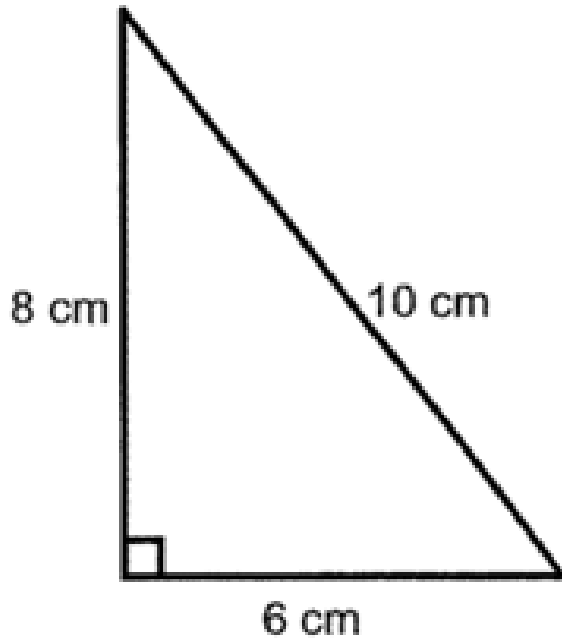
4 in
A = 18 in²
8 in
A = ?

8. FLOWER GARDEN A rectangular shaped flower garden has a length of 5 yards and an area of 15 square yards. A neighbor's flower garden is similar and has a length of 7 yards. What is the area of the neighbor's flower garden? Round your answer to the nearest whole number.

$$SF = \frac{7}{5} \qquad 15 \cdot \left(\frac{7}{5}\right)^2 = \boxed{29.4 \, yd^2}$$

$$15 \cdot \left(\frac{49}{25}\right)$$

9. Use the triangle below to find the perimeter of the new similar figures with the given scale factor.

A right triangle with vertical side 8 cm, horizontal side 6 cm (with a right angle between them), and hypotenuse 10 cm.

8 cm   10 cm

6 cm

$$P = 24 \text{ cm} \quad A = 24 \text{ cm}^2$$

$$A = \frac{1}{2}(8)(6)$$

A) New perimeter and area of similar triangle dilated by a scale factor of $\frac{3}{4}$.

$$24 \cdot \frac{3}{4} = 18$$

$$24 \cdot \left(\frac{3}{4}\right)^2 = 13.5$$

Perimeter = 18 cm

Area = 13.5 cm^2

B) New perimeter and area of similar triangle dilated by a scale factor of 5.

$$24 \cdot 5 = 120$$

$$24 \cdot 5^2 = 600$$

Perimeter = 120 cm

Area = 600 cm^2
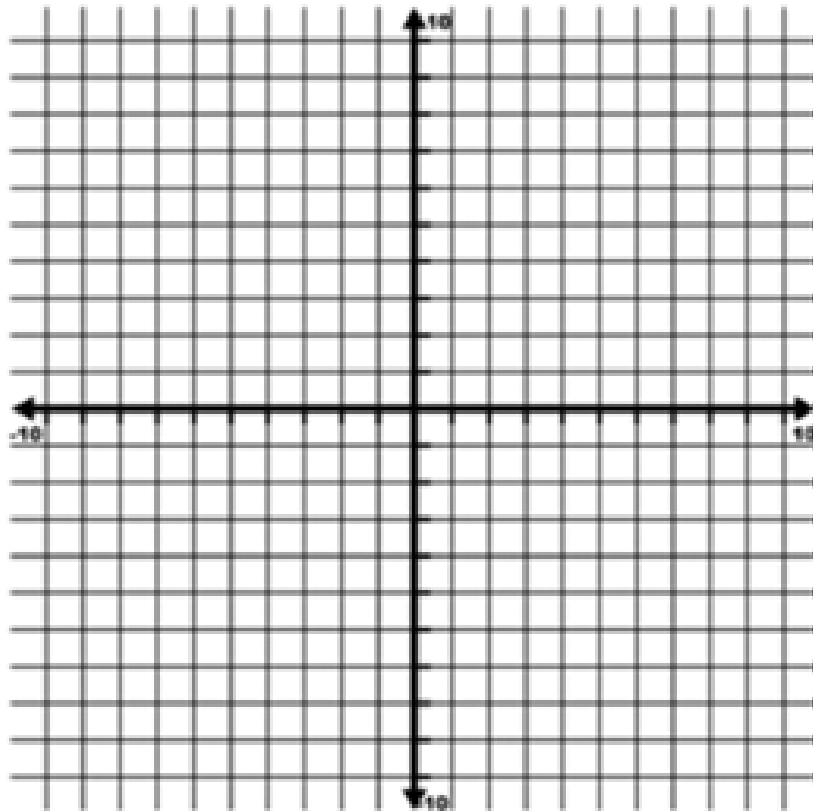
Translations

1) Complete each translation described. Label the image and find the new coordinates.

A) Graph $\triangle PQR$ with vertices $P(-2, 3)$, $Q(1, 2)$, and $R(3, -1)$. Translate the triangle using the translation notation below.
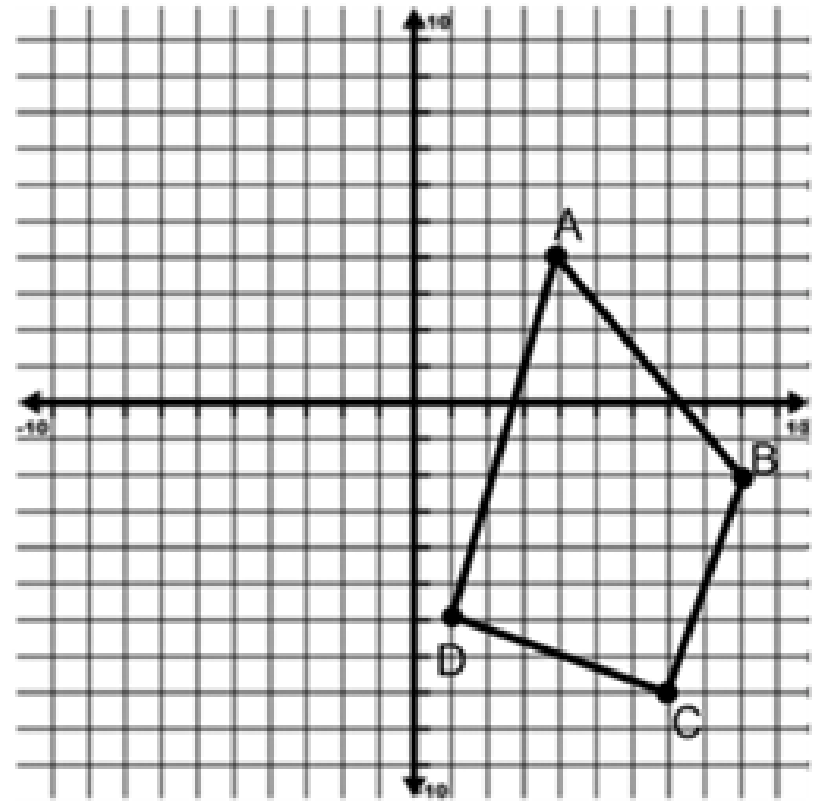
$$(x,y) \rightarrow (x + 3, y - 6)$$

B) Translate the quadrilateral $ABCD$ using the translation notation below.
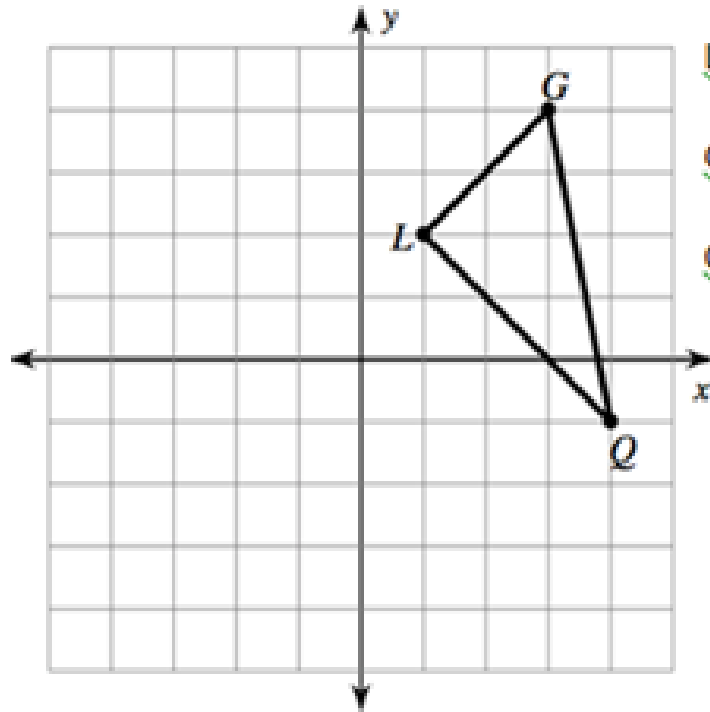
$$(x,y) \rightarrow (x - 5, y + 4)$$

P'$\rightarrow$(____ , ____)   Q'$\rightarrow$(____ , ____)

R'$\rightarrow$(____ , ____)

A'$\rightarrow$(____ , ____)   B'$\rightarrow$(____ , ____)

C'$\rightarrow$(____ , ____)   D'$\rightarrow$(____ , ____)

Reflections

2) Complete each reflection described. Label the image and find the new coordinates.

A) Reflect the ∆LGQ over the x-axis.

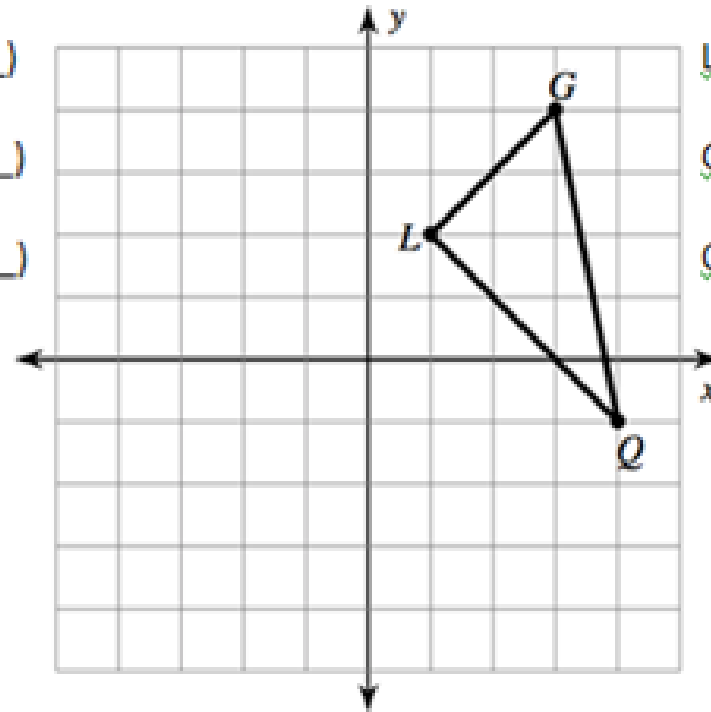L' → (_____, _____)

G' → (_____, _____)

Q' → (_____, _____)

B) Reflect the ∆LGQ over the y-axis.

L' → (_____, _____)

G' → (_____, _____)

Q' → (_____, _____)

Rotations

3) A triangle has vertices $A(4,5), B(2,3),$ and $C(1,7)$. Graph the triangle on each coordinate grid and perform the specified rotation about the origin. Write down the image points next to the graph before yc graph the points.
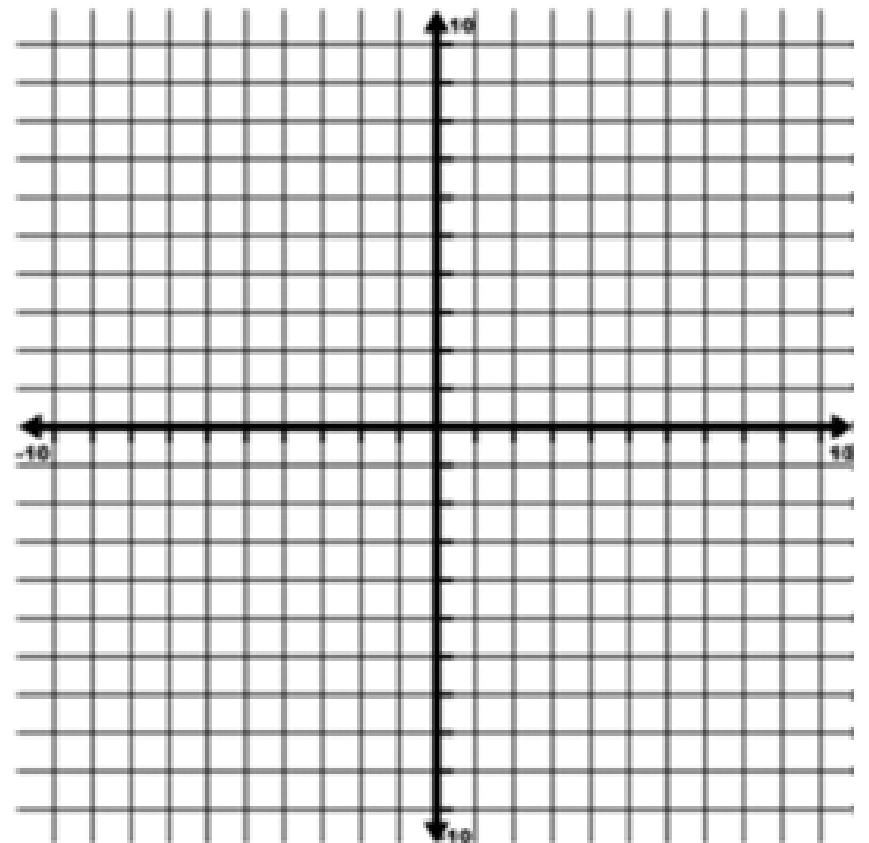
A) 90° clockwise rotation
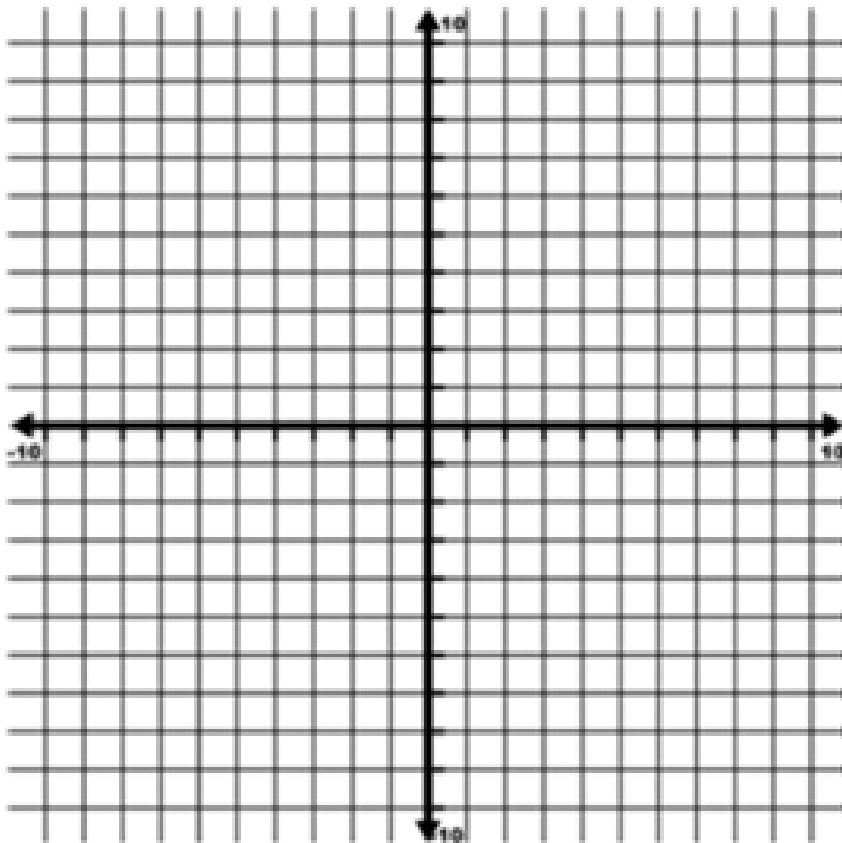
B) 180° clockwise rotation

A'→(____, ____)   B'→(____, ____)

C'→(____, ____)

A'→(____, ____)   B'→(____, ____)

C'→(____, ____)

4) Complete each rotation described. Label the image and find the new coordinates.
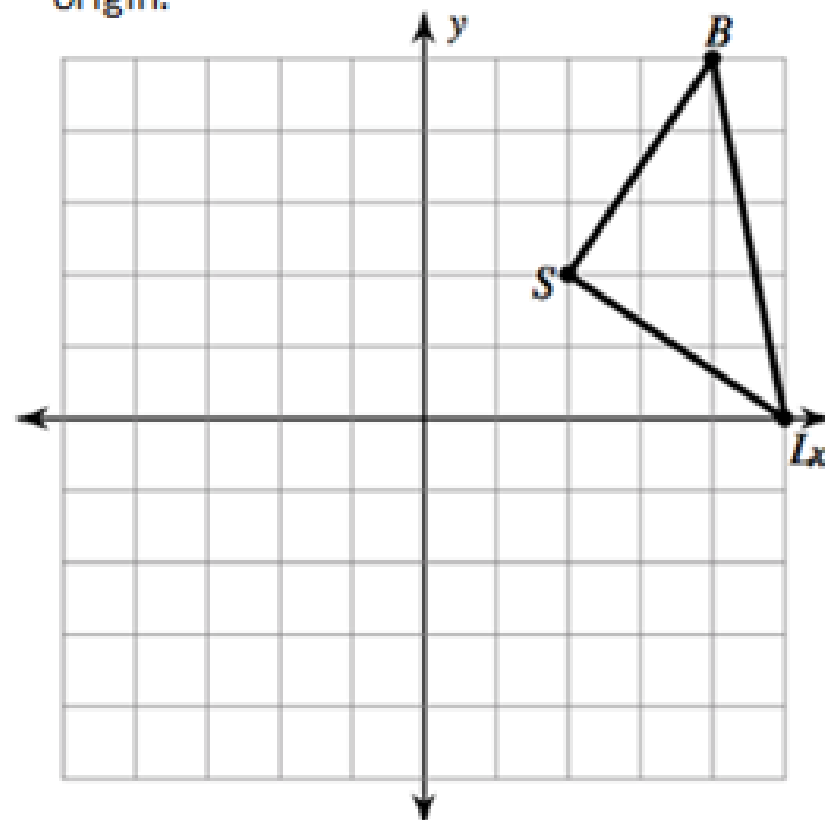
A) Rotate triangle *JHQ* 270° clockwise about the origin.
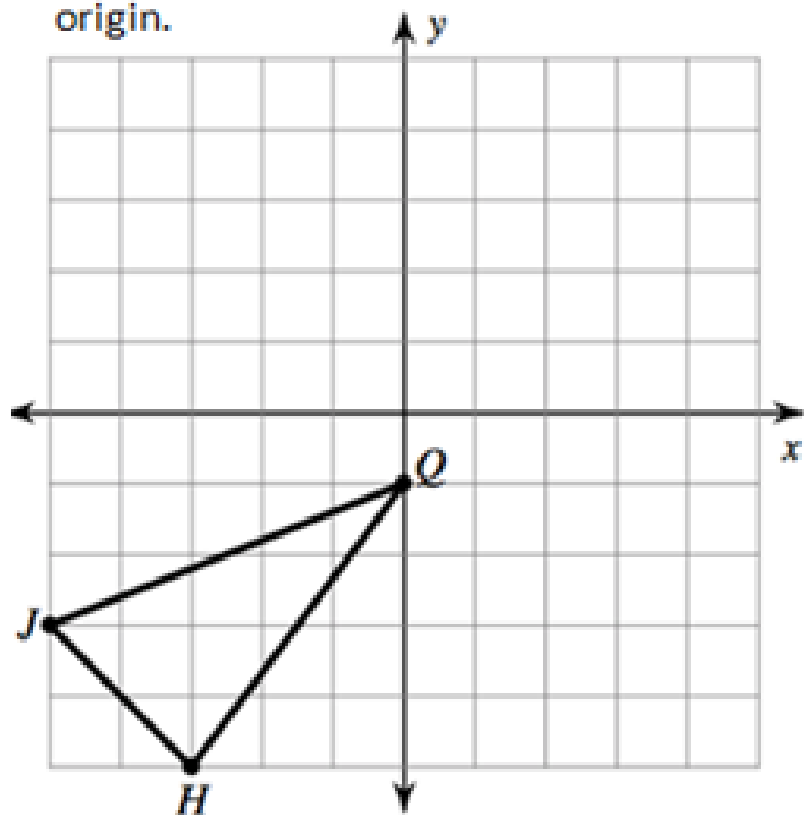
B) Rotate triangle *SBL* 90° clockwise about the origin.

J (,   ) → J' (,   )

H (,   ) → H' (,   )

Q (,   ) → Q' (,   )

S (,   ) → S' (,   )

L (,   ) → L' (,   )

B (,   ) → B' (,   )

Dilations

5) Complete each dilation described. Label the image and find the new coordinates. Then answer the questions about perimeter and area using the original image and scale factor.

A) Graph the rectangle with the vertices below and then dilate it using the scale factor given.

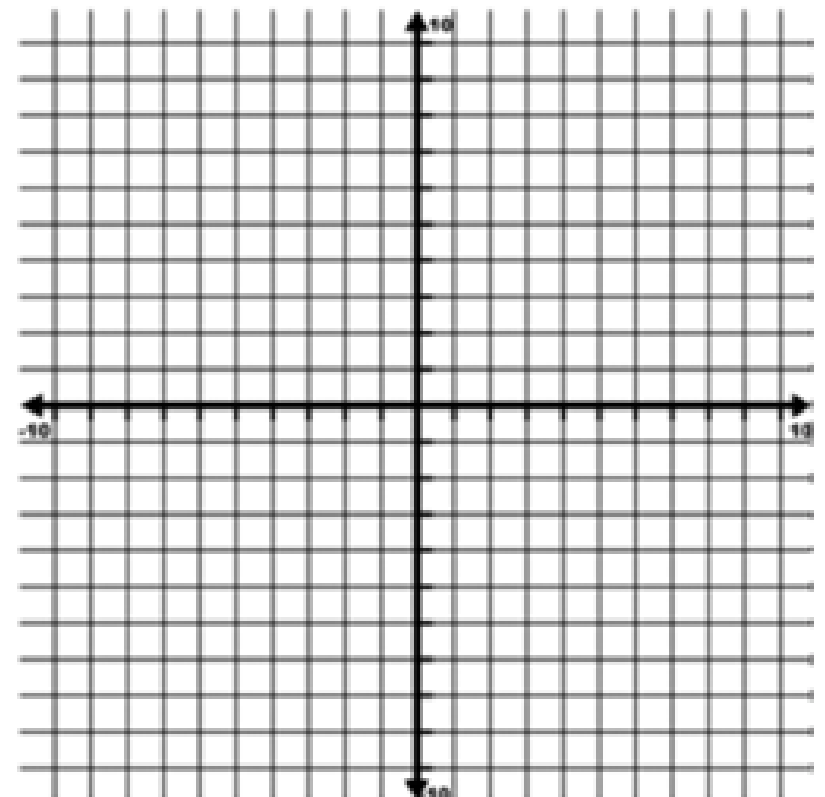$A(2,2), B(-1,2), C(-1,-1), D(2,-1)$

Scale factor: 2

What is the perimeter and area of the original rectangle?

P = _____   A = _____

What is the perimeter and area of the new rectangle?

Use old figure and scale factor

P = _____   A = _____

A'→(____, ____)   B'→(____, ____)

C'→(____, ____)   D'→(____, ____)

B) Dilate $\triangle XYZ$ by the scale factor given.

Scale factor: $\frac{1}{3}$

$9^2 + 6^2 = c^2$

$\sqrt{117} = \sqrt{c^2}$

$10.8 = c$

What is the perimeter and area of the original rectangle?
(**Hint**→ *Side YZ and XY are the same length and you have to use the Pythagorean Theorem to find them.*)
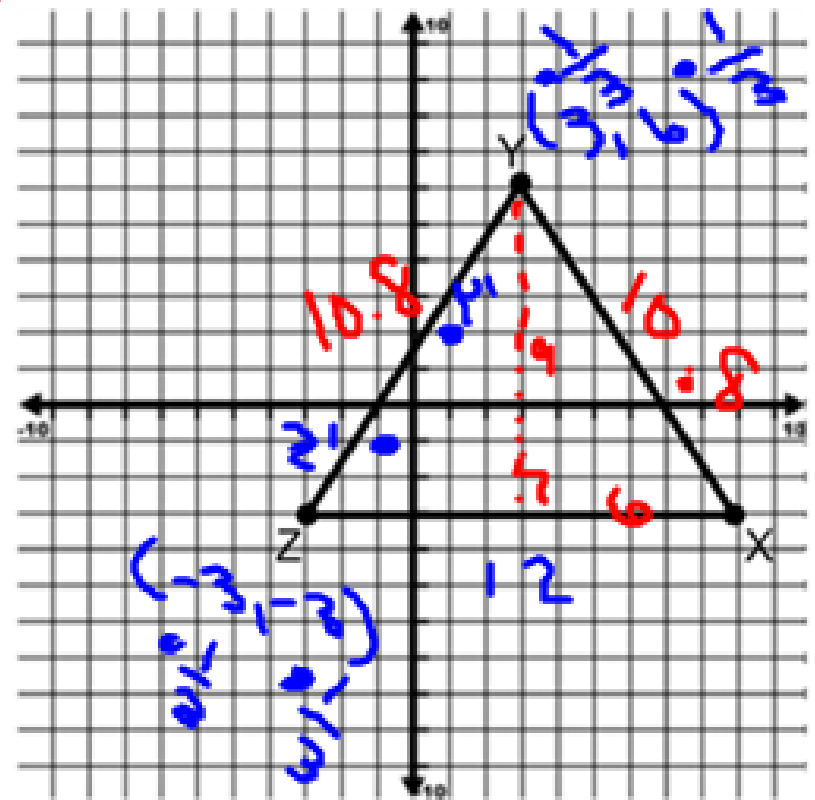
$A = \frac{1}{2}(12)(9)$

$10.8 + 10.8 + 12$

$P = \underline{33.6 \text{ units}}$ $A = \underline{54 \text{ units}^2}$

What is the perimeter and area of the new rectangle?
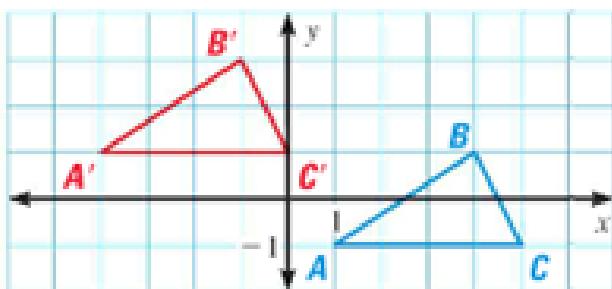**Use old figure and scale factor**

Triangle

$33.6 \cdot \frac{1}{3} = 11.2$ $54 \cdot \left(\frac{1}{3}\right)^2 = 6$

$P = \underline{11.2 \text{ units}}$ $A = \underline{6 \text{ units}^2}$

$(3, 6)$ $\frac{\sqrt{13}}{3}, \frac{\sqrt{13}}{3}$

10.8 Z' 10.8

12 6

$\left(-3, -3\right)$ $\frac{-1}{3}, \frac{-1}{3}$

$X' \rightarrow (\underline{}, \underline{})$ $Y' \rightarrow (\underline{1}, \underline{2})$

$Z' \rightarrow (\underline{-1}, \underline{-1})$

6) Identify each transformation that is taking place, write a transformation rule, and decide whether the images are congruent or not.
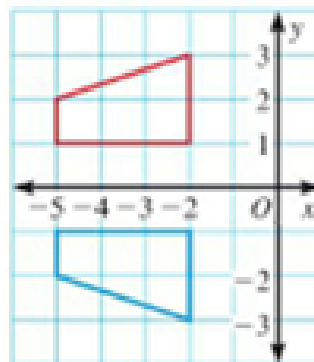
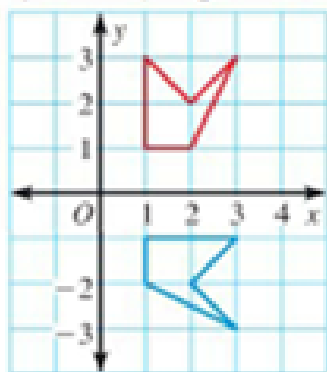**A)**

Transformation: _____

Rule:

Congruent? _____

B)

Transformation: _____

Rule:

Congruent? _____

C) The top figure is the pre-image.
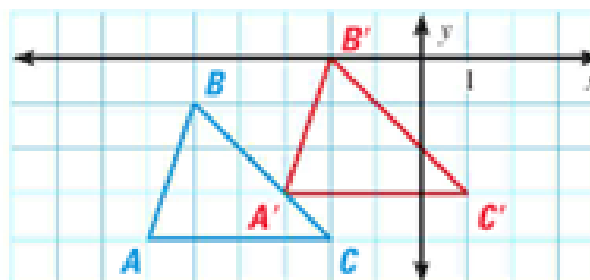

Transformation: _____

Rule:

Congruent? _____

D)
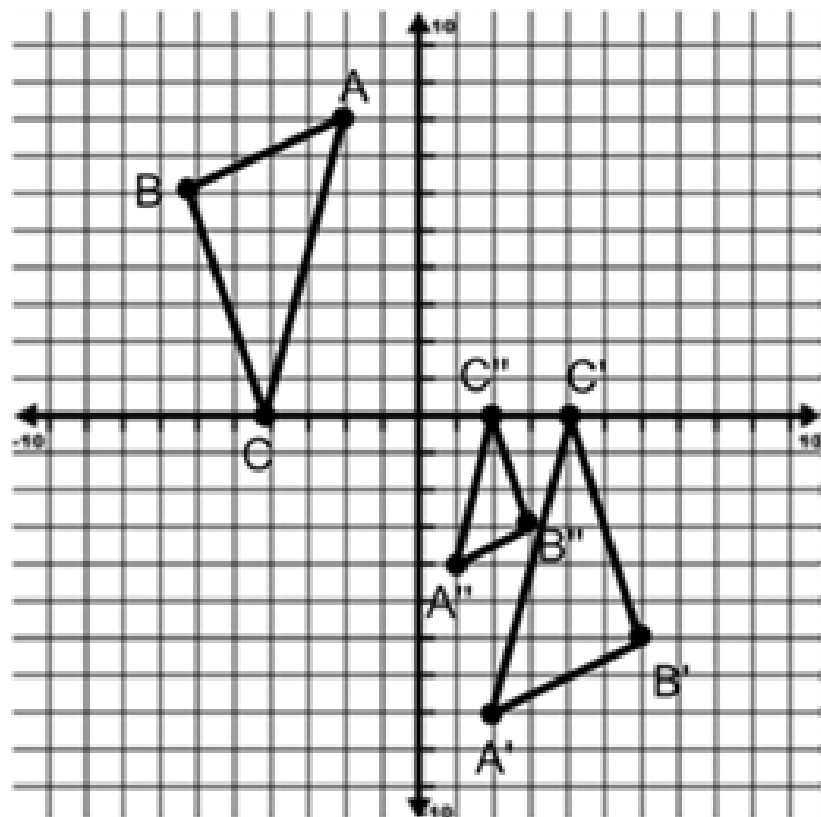

Transformation: _____

Rule:

Congruent? _____

Identify what two transformations are occurring and then fully describe them.

7)

A) 1st Transformation: _____

Rule →

B) 2nd Transformation: _____

Rule →

C) Circle all the images below that are congruent.

$\triangle ABC$ $\qquad$ $\triangle A'B'C'$ $\qquad$ $\triangle A''B''C''$