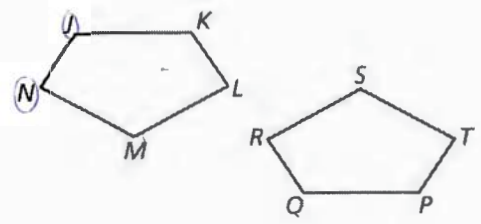
Name KEY '14 Date

Chapter 2 – Review

The figures are congruent. Name the corresponding angles and the corresponding sides.

1)

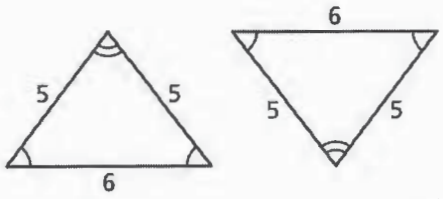


$\overline{JK} \cong \overline{QP}$ $\overline{ML} \cong \overline{ST}$ $\overline{MN} \cong \overline{SR}$ $\overline{JN} \cong \overline{QR}$ $\overline{KL} \cong \overline{PT}$

$\angle J \cong \angle Q$ $\angle N \cong \angle R$ $\angle K \cong \angle P$ $\angle M \cong \angle S$ $\angle L \cong \angle T$

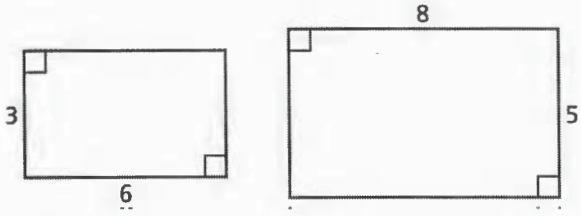
Tell whether the two figures are congruent. Explain your reasoning.

2)



Yes all corresponding sides and angles are congruent

3)



No, corresponding sides do not have same length.

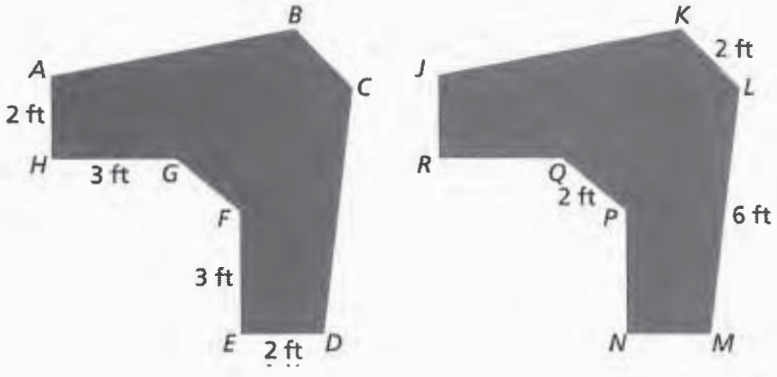
4) The tops of the desks are identical.

a. What is the length of side *NP*?

3 ft

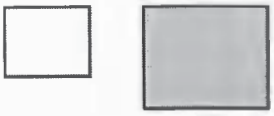
b. Side *AB* is congruent to side *CD*. What is the length of side *AB*?

6 ft



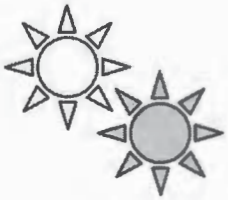
Tell whether the shaded figure is a translation of the nonshaded figure. Explain your reasoning.

5)



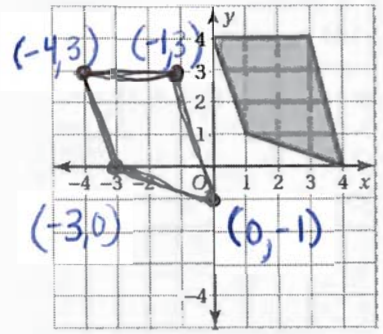
No they are different sizes

6)

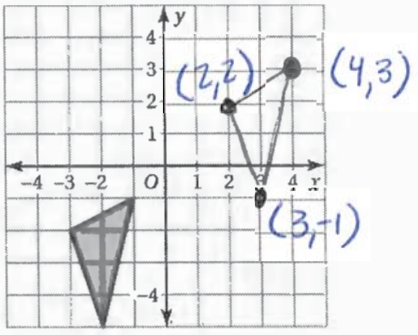


Yes, same shape and size, just moved to the left

7) Translate the figure 4 units left and 1 unit down. What are the coordinates of the image?

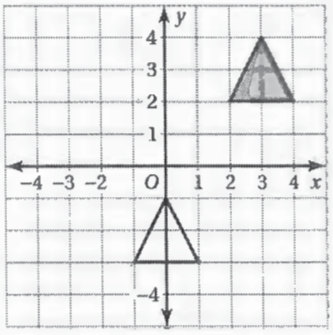


8) Translate the triangle 5 units right and 4 units up. What are the coordinates of the image?



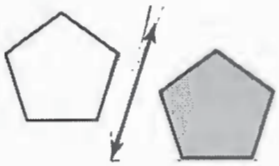
9) Describe the translation from the shaded figure to the nonshaded figure.

Translate 3 units left and 5 units down



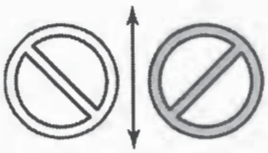
Tell whether the shaded figure is a reflection of the nonshaded figure. Explain your reasoning.

10)



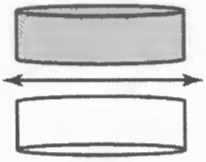
No, this is not a reflection. It seems more like a translation.

11)



Yes, reflected on the y-axis. Shapes are mirror images.

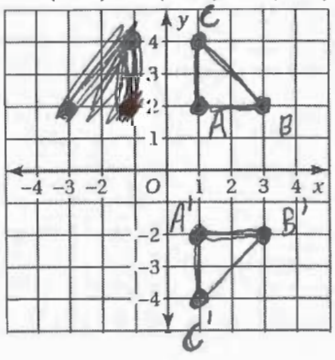
12)



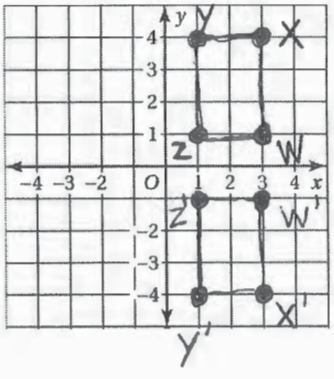
Yes. Reflected on the x-axis. Images are mirror images

Draw the figure and its reflection in the x-axis. Identify the coordinates of the image.

13) $A(1, 2)$, $B(3, 2)$, $C(1, 4)$

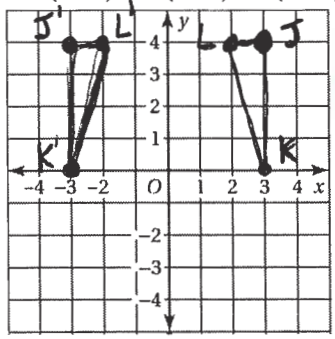


14) $W(3, 1)$, $X(3, 4)$, $Y(1, 4)$, $Z(1, 1)$

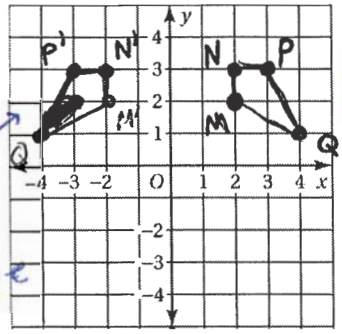


Draw the figure and its reflection in the y-axis. Identify the coordinates of the image.

15) $J(3, 4)$, $K(3, 0)$, $L(2, 4)$

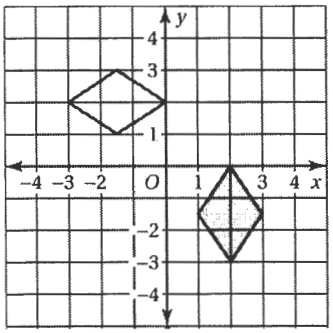


16) $M(2, 2)$, $N(2, 3)$, $P(3, 3)$, $Q(4, 1)$



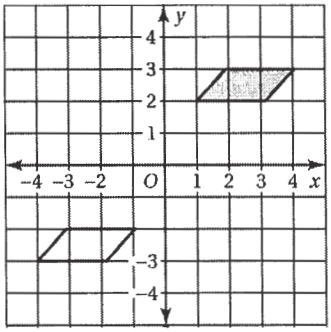
Tell whether the shaded figure is a rotation of the nonshaded figure about the origin. **If so, give the angle and the direction of rotation.**

17)



No

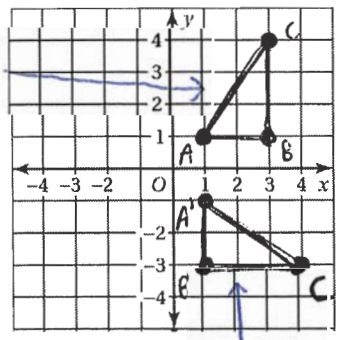
18)



180° Rotation

The vertices of a triangle are $A(1, 1)$, $B(3, 1)$, and $C(3, 4)$. Rotate the triangle as described. Find the coordinates of the image.

19) 90° clockwise about the origin

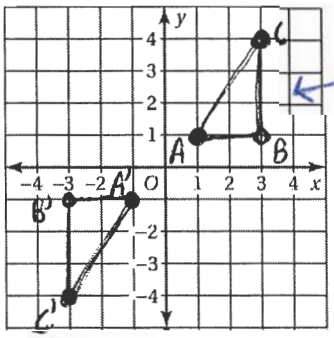


$A(1,1) \rightarrow A'(1,-1)$

$B(3,1) \rightarrow B'(1,-3)$

$C(3,4) \rightarrow C'(4,-3)$

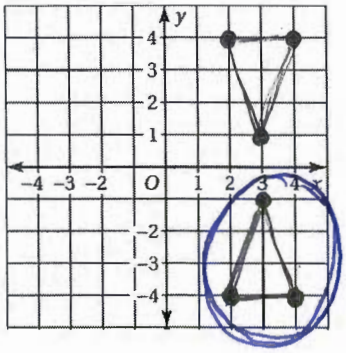
20) 180° about the origin



21) The vertices of a triangle are $(-4, -4)$, $(-2, -4)$, and $(-3, -1)$. Rotate it 180° about the origin, AND then reflect it in the x-axis. What are the vertices of the final triangle?

(4,4) (2,4) (3,1)

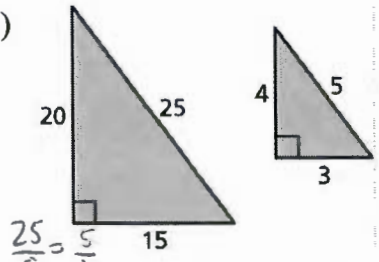
(4,-4) (2,-4) (3,-1)



← final answer

Tell whether the two figures are similar. Explain your reasoning.

22)



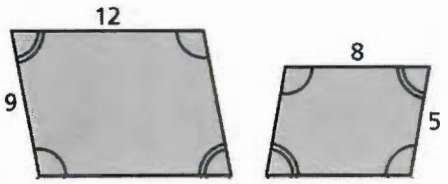
$\frac{25}{5} = \frac{5}{1}$

$\frac{15}{3} = \frac{5}{1}$

$\frac{20}{4} = \frac{5}{1}$

Yes. All corresponding sides have the same ratio.

23)

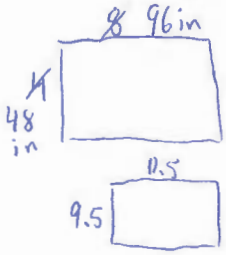


$\frac{12}{8} = \frac{3}{2}$

$\frac{9}{5} \neq \frac{3}{2}$

No, corresponding side do not have the same ratio

24) In your classroom, a dry erase board is 8 feet long and 4 feet wide. Your teacher makes individual dry erase boards for you to use at your desk that are 11.5 inches long and 9.5 inches wide. Are the boards similar? Explain.



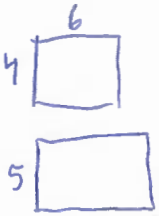
$\frac{48}{9.5} = \frac{480 \div 5}{95 \div 5} = \frac{96}{18} = \frac{16}{3}$

$\frac{96}{11.5} = \frac{960 \div 5}{115 \div 5} = \frac{192}{23}$

Not the same ratio so they are not similar

25) You have a 4 x 6 photo of you and your friend.

a. You order a 5 x 7 print of the photo. Is the new photo similar to the original? Explain.

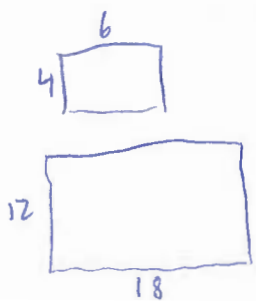


$\frac{4}{5} \stackrel{?}{=} \frac{6}{7}$

not equal

Ratios are not equal so photos are not similar

b. You enlarge the original photo to three times its size on your computer. Is the new photo similar to the original? Explain.



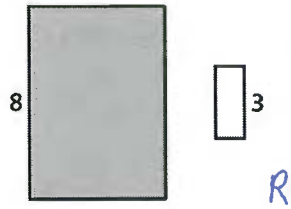
$\frac{4}{12} = \frac{1}{3}$

$\frac{6}{18} = \frac{1}{3}$

Yes, ratios of corresponding sides are equal so they are similar

The two figures are similar. Find the ratios (shaded to nonshaded) of the perimeters and of the areas.

26)

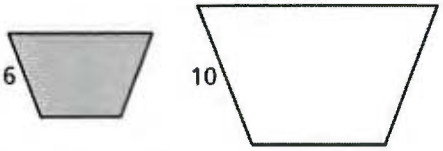


Ratio of corr. sides $= \frac{8}{3}$

Ratio of Perimeter $= \boxed{\frac{8}{3}}$

Ratio of areas $= \boxed{\frac{64}{9}}$

27)



Ratio of corr. sides $= \frac{6}{10} = \frac{3}{5}$

Ratio of perimeter $= \boxed{\frac{3}{5}}$

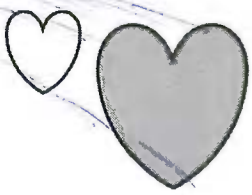
Ratio of area $= \left(\frac{3}{5}\right)^2 = \boxed{\frac{9}{25}}$

28) You buy two picture frames that are similar. The ratio of the corresponding side lengths is 4 : 5. What is the ratio of the areas?

Ratio of corr. sides $= \frac{4}{5} \rightarrow$ Ratio of areas $= \left(\frac{4}{5}\right)^2 = \boxed{\frac{16}{25}}$

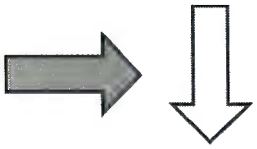
Tell whether the shaded figure is a dilation of the nonshaded figure.

29)



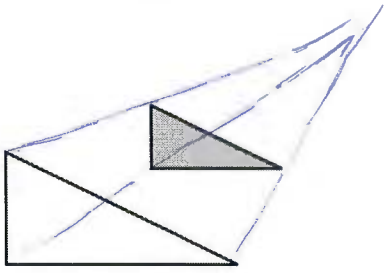
Yes (there's a point of dilation)

30)



No, rotation

31)

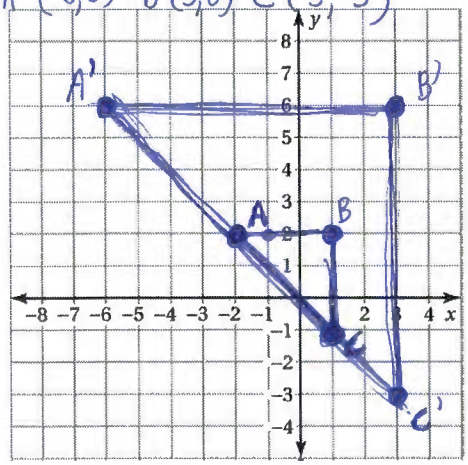


Yes (there's a point of dilation)

The vertices of a figure are given. Draw the figure and its image after a dilation with the given scale factor. Identify the type of dilation.

32) $A(-2, 2), B(1, 2), C(1, -1); k = 3$

A'(-6,6) B'(3,6) C'(3,-3)



33) $D(4, 2), E(4, 8), F(8, 8), G(8, 2); k = \frac{1}{2}$

D'(2,1) E'(2,4) F'(4,4) G'(4,1)