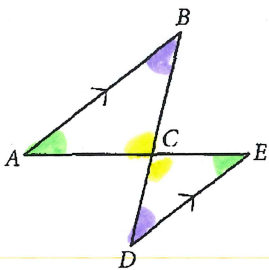


Similarity Practice Test/Review

1. State the similarity statement, the similarity shortcut you used, and why you chose it.



$\triangle CBA \sim \triangle CDE$ by AA similarity

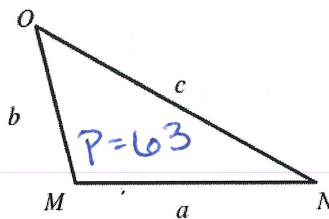
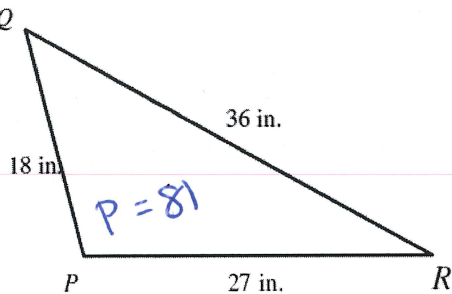
$\angle A \cong \angle E$ alt int \angle s are \cong

$\angle B \cong \angle D$ alt int \angle s are \cong

$\angle BCA \cong \angle ECD$ vertical \angle s are \cong

2. Find a , b , and c if the perimeter of $\triangle MON$ is 63 inches. All measurements are in inches. Show all work!

$\triangle QPR \sim \triangle OMN$



$a = \underline{21 \text{ in}}$

$b = \underline{14 \text{ in}}$

$c = \underline{28 \text{ in}}$

$PR = \frac{63}{81} = \frac{7}{9}$

$\frac{7}{9} = \frac{a}{27}$

$9a = 189$
 $a = 21$

$\frac{7}{9} = \frac{b}{18}$

$9b = 126$
 $b = 14$

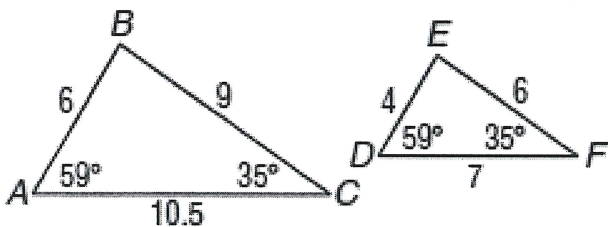
$\frac{7}{9} = \frac{c}{36}$

$9c = 252$
 $c = 28$

3. Explain how any two squares are similar.

2 squares are similar because they have 4 $\cong 90^\circ$ corresponding angles and their SLR must be =

4. Determine if these two figures are similar. Justify it (show work) without using a shortcut. If they are similar, write their similarity statement.



$\angle B \cong \angle E$

$\angle A \cong \angle D$

$\angle C \cong \angle F$

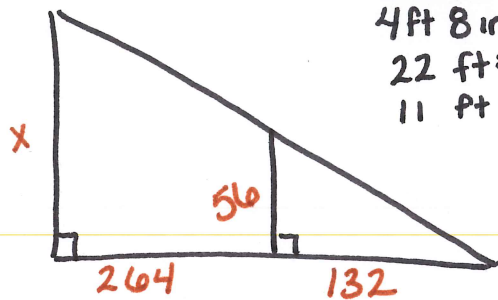
$\frac{6}{4} = \frac{3}{2}$

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

$\frac{10.5}{7} = \frac{3}{2}$

$\triangle ABC \sim \triangle DEF$

5. Igor, who is 4 ft 8 in. tall, wishes to find the height of an oak tree in front of his castle. He walks along the shadow of the tree until the end of his shadow exactly overlaps the end of the treetop's shadow. At that point, he is 22 feet from the foot of the tree and 11 ft from the end of the shadows. How tall is the oak tree in inches and feet?



Conversions

4 ft 8 in: $4(12) + 8 = 56$

22 ft: 264 in

11 ft: 132 in.

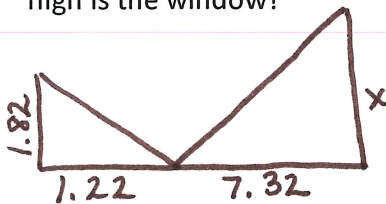
$$\frac{x}{56} = \frac{396}{132}$$

$$132x = 22176$$

$$x = 168 \text{ in.}$$

$$x = 14 \text{ ft.}$$

6. Private eye Samantha Diamond places a mirror on the ground between herself and an apartment building and stands so that when she looks in to the mirror, she sees into a window. The mirror's crosshairs are 1.22 meters from her feet and 7.32 meters from the base of the building. Sam's eye is 1.82 meters above the ground. How high is the window?



$$\frac{1.82}{x} = \frac{1.22}{7.32}$$

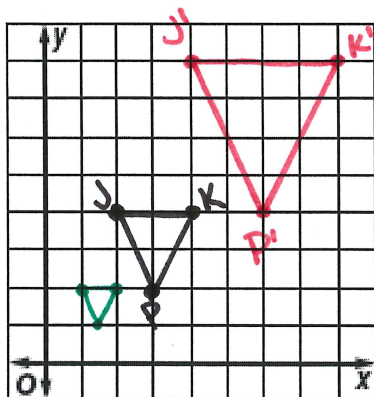
$$13.3224 = 1.22x$$

$$x = 10.92 \text{ m}$$



For #7 and #8, find the image of each polygon given the vertices after a dilation centered at the origin with a scale factor of 2. With a different color, graph a dilation centered at the origin with a scale factor of 1/2.

7. $J(2, 4), K(4, 4), P(3, 2)$



8. $D(-2, 0), G(0, 2), F(2, -2)$

