Name: Key Date: _____ Hour: _____

ACC Geometry Similarity Review - Quiz B

All measurements are in centimeters.

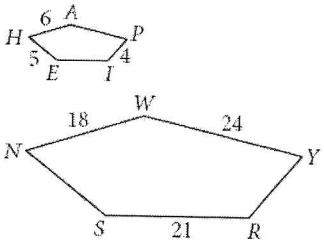
1. *HAPIE* ~ *NWYRS*

$AP =$ 8cm

$EI =$ 7cm

$SN =$ 15cm

$YR =$ 12cm



2. *QUAD* ~ *SIML*

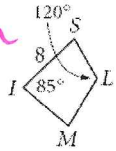
$SL =$ 26/5 cm

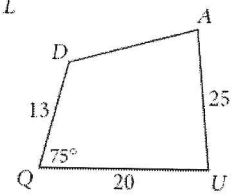
$MI =$ 10cm

$m\angle D =$ 120°

$m\angle U =$ 85°

$m\angle A =$ 80°





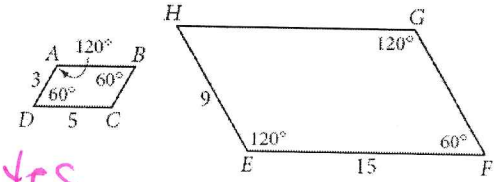
The sum of the interior ∠s of a quadrilateral is 180(n−2) = 180(4−2) = 360°

n=4 sides

We will learn this later

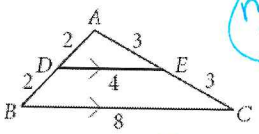
In Exercises 3–6, decide whether or not the figures are similar. Explain why or why not.

3. *ABCD* and *EFGH*



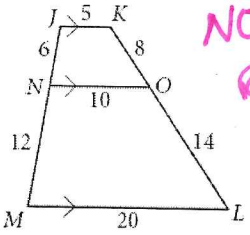
Yes

4. △*ABC* and △*ADE*



Yes

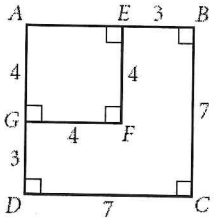
5. *JKON* and *JKLM*



NO, Side Length Ratios aren't equal

$\frac{JK}{JK} = 1 \neq \frac{JN}{JM} = \frac{1}{3}$

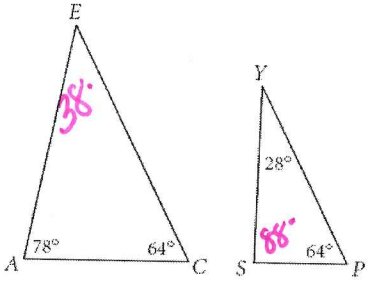
6. *ABCD* and *AEFG*



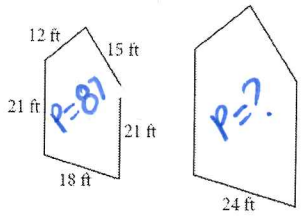
Yes, corresponding ∠s are ≅ and all side length ratios are $= \frac{4}{7}$ (must show ALL 4 SLR)

7. Explain if the following triangles are similar if so state their similarity statement- order matters!!!

NO, corr. ∠s are not ≅



8. Find the perimeter of the larger pentagon if the two pentagons are similar.

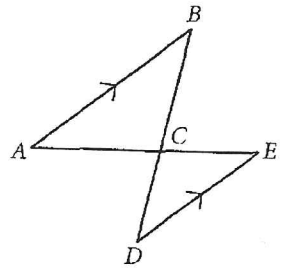


SLR = PR

$\frac{18}{24} = \frac{87}{P}$

P = 116 ft

9. State the similarity statement and EXPLAIN the similarity shortcut you used in DETAIL!

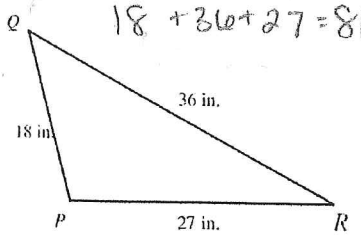


$\Delta CBA \sim \Delta CDE$

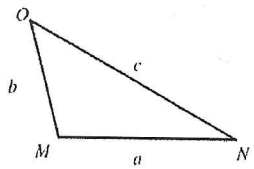
AA similarity because $\angle BCA \cong \angle ECD$ since they are vertical angles and $\angle D \cong \angle B$ because they are alternate interior angles.

10. $\Delta QPR \sim \Delta OMN$

Find a, b, and c if the perimeter of ΔMON is 63 inches. All measurements are in inches.



$18 + 36 + 27 = 81$

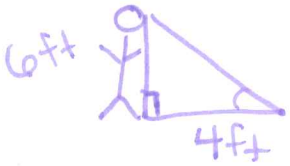


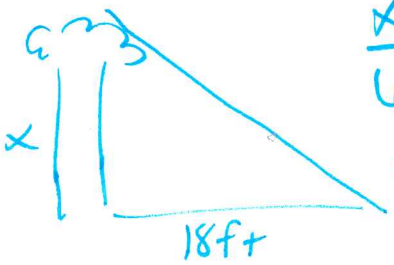
$\frac{63}{81} = \frac{b}{18}$ $1134 = 81b$ $\boxed{14 \text{ in.} = b}$

$\frac{63}{81} = \frac{c}{36}$ $2268 = 81c$ $\boxed{28 \text{ in.} = c}$

$\frac{63}{81} = \frac{a}{27}$ $1701 = 81a$ $\boxed{21 \text{ in.} = a}$

11 At a certain time of day, a 6 ft man casts a 4 ft shadow. At the same time of day, how tall is a tree that casts an 18 ft shadow?

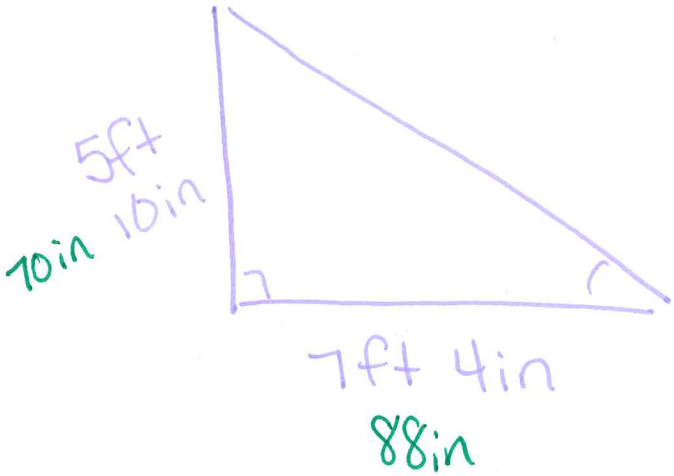


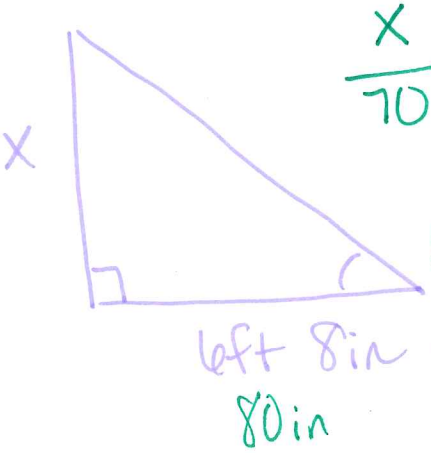


$\frac{x}{6} = \frac{18}{4}$

$x = 27$ ft tall

12. If a 5 ft 10 in. person casts a 7 ft 4 in. shadow, how tall is a person who, at the same time, casts a 6 ft 8 in. shadow? Give your answer to the nearest inch.





$\frac{x}{70} = \frac{80}{88}$

$63.\overline{636}$

≈ 64 inches tall

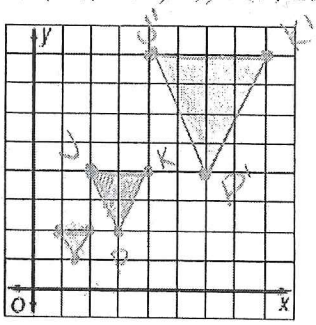
13 Private eye Samantha Diamond places a mirror on the ground between herself and an apartment building and stands so that when she looks into the mirror, she sees into a window. The mirror's crosshairs are 1.22 meters from her feet and 7.32 meters from the base of the building. Sam's eye is 1.82 meters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

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

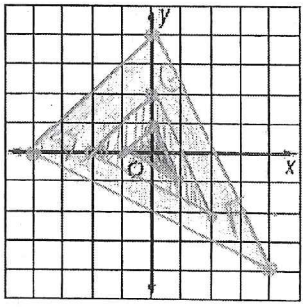
$x = 10.92m$

COORDINATE GEOMETRY **Find the image of each polygon, given the vertices, after a dilation centered at the origin with a scale factor of 2. Then graph a dilation centered at the origin with a scale factor of $\frac{1}{2}$.**

14 $J(2, 4), K(4, 4), P(3, 2)$

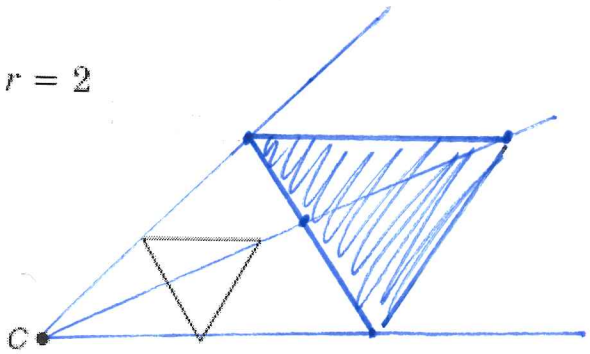


15. $D(-2, 0), G(0, 2), F(2, -2)$

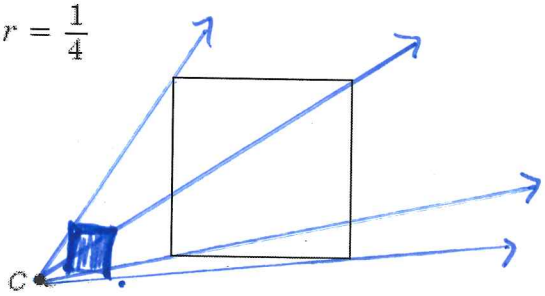


16. **Draw the dilation image of each figure with center C and the given scale factor.**

$r = 2$

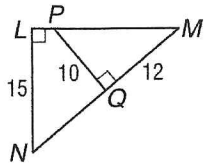


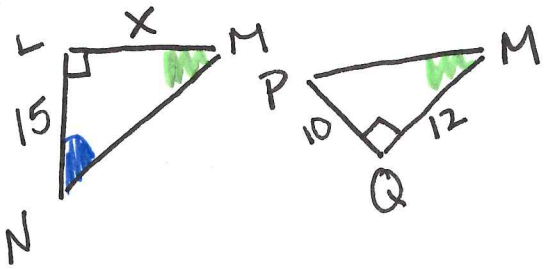
$r = \frac{1}{4}$



Using Similar Right Triangles

17. State the similarity statement and find LM. $\triangle LMN \sim \triangle QMP$

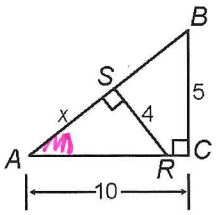




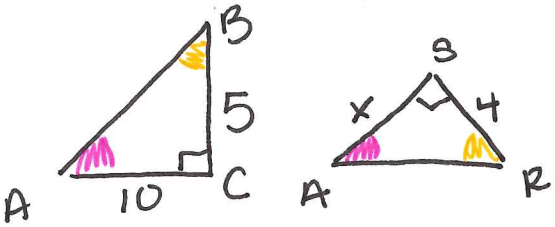
$\frac{x}{12} = \frac{15}{10}$

$x = 18$ $\boxed{\therefore LM = 18}$

18. State the similarity statement and find x.



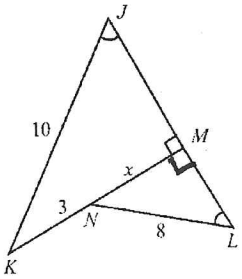
$x = 8$ $\triangle ASR \sim \triangle ACB$

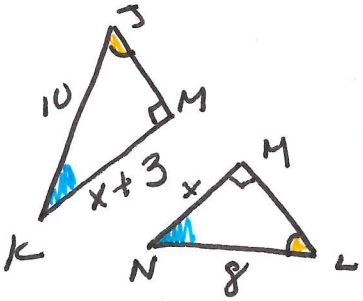


$\frac{x}{10} = \frac{4}{5}$

$\boxed{x = 8}$

19. State the similarity statement and find x. $x = 12$, $KM = 15$, $NM = 12$





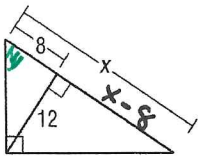
$\frac{x}{x+3} = \frac{8}{10}$

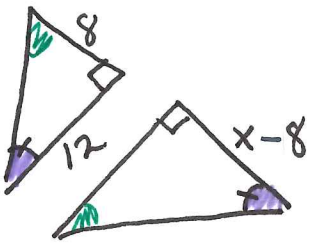
$10x = 8x + 24$

$2x = 24$

$\boxed{x = 12}$

20. Find x. 26





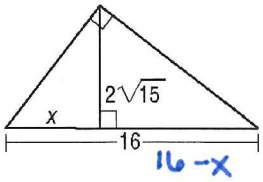
$\frac{x-8}{12} = \frac{12}{8}$

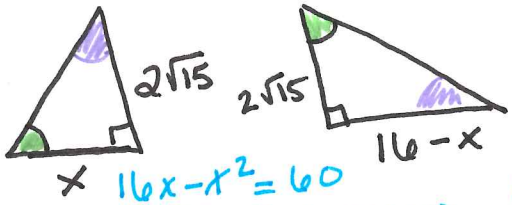
$8x - 64 = 144$

$8x = 208$

$\boxed{x = 26}$

21. Find x. 6, 10





$\frac{16-x}{2\sqrt{15}} = \frac{2\sqrt{15}}{x}$

$x(16-x) = 2\sqrt{15} \cdot 2\sqrt{15}$ $4 \cdot 15 = 60$

$16x - x^2 = 4\sqrt{15 \cdot 15}$

$16x - x^2 = 60$

Quadratic!!

$16x - x^2 = 60$

$0 = x^2 - 16x + 60$

$0 = (x-10)(x-6)$

$\boxed{x = 10 \text{ or } x = 6}$