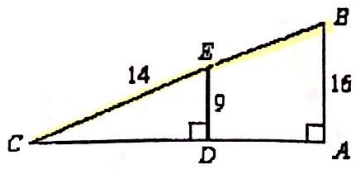
Name: Milani Class: 2nd Date: The day before my birthday ID: A

Similarity Congruence and Proof Review 2 (Show all work)

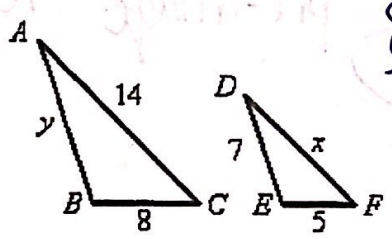
1. Given that $\frac{ED}{BA} = \frac{EC}{BC}$, find BC to the nearest tenth. The figure is not drawn to scale.



a. 27.1
b. 3.1
c. 24.9
d. 10.9

$\frac{14}{x} = \frac{9}{16}$

2. Given that $\Delta ABC \sim \Delta DEF$, solve for x and y.



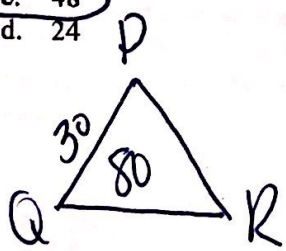
$\frac{8.75}{14} = \frac{7}{y}$

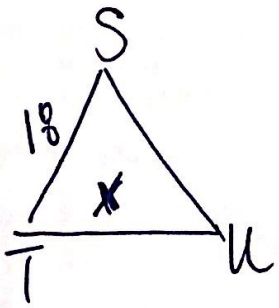
a. $x = 9.75, y = 11.2$
b. $x = 8.75, y = 11.2$
c. $x = 8.75, y = 10.2$
d. $x = 9.75, y = 10.2$

$\frac{14}{x} = \frac{8}{5}$

3. The perimeter of ΔPQR is 80, $PQ = 30$, $\Delta PQR \sim \Delta STU$, and $ST = 18$. What is the perimeter of ΔSTU?

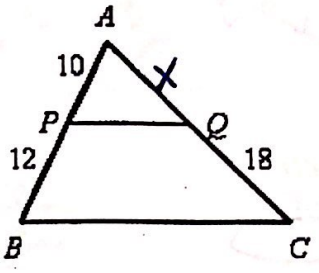
a. 18.4
b. 6.8
c. 48
d. 24





$\frac{18}{30} = \frac{x}{80}$

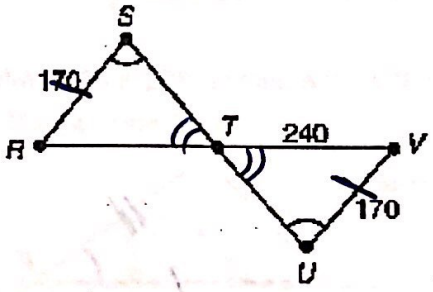
4. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of $\overline{AQ}$.



a. 17
b. 19
c. 12
d. 15

$\frac{10}{12} = \frac{x}{18}$

5. Which postulate or theorem can be used to determine the length of $\overline{RT}$?



a. ASA Congruence Postulate
b. AAS Congruence Theorem
c. SSS Congruence Postulate
d. SAS Congruence Postulate

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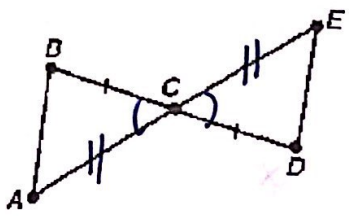
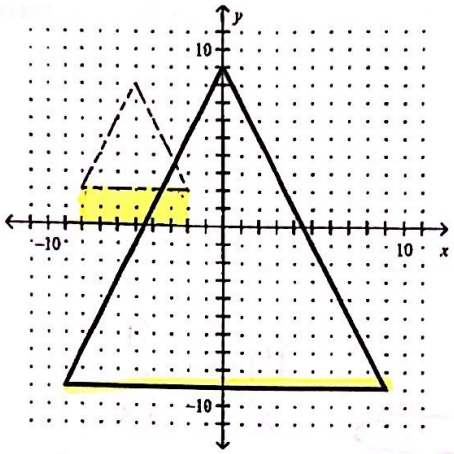
6. What must be true in order for $\Delta ABC \cong \Delta EDC$ by the SAS Congruence Postulate?



a. $\angle B \cong \angle D$
b. $\angle A \cong \angle E$
c. $\overline{AC} \cong \overline{CE}$
d. $\overline{AB} \cong \overline{DE}$

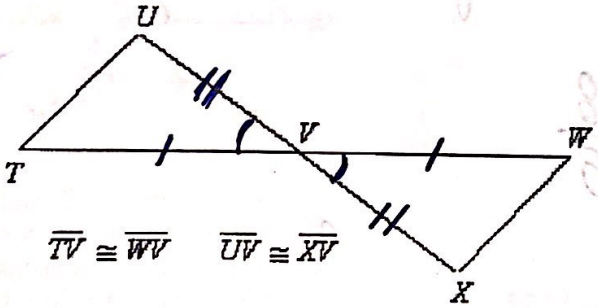
7. The dashed triangle is the image of the solid triangle for a dilation with center at the origin. What is the scale factor?



a. $\frac{2}{3}$
b. $\frac{3}{2}$
c. 3
d. $\frac{1}{3}$

$\frac{\text{image}}{\text{pre-image}} = \frac{6}{18} = \frac{1}{3}$

8. Refer to the figure shown. Which of the following statements is true?



~~a. $\Delta TUV \cong \Delta XWV$ by ASA~~
b. $\Delta TUV \cong \Delta VWX$ by SAS
c. $\Delta TUV \cong \Delta WXV$ by SAS
~~d. $\Delta TUV \cong \Delta WXV$ by SSS~~

9. In ΔABC, $AB = 3x - 2$, $BC = x + 4$, and $AC = 7$. Also $\overline{AB} \cong \overline{BC}$. Which term does NOT describe ΔABC?
a. Equilateral
b. Acute
c. Isosceles
d. Obtuse

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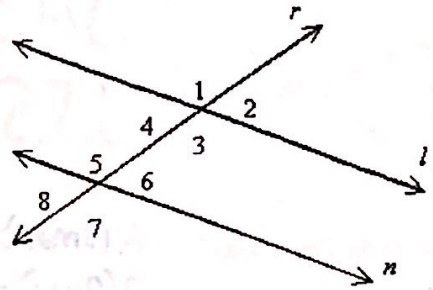
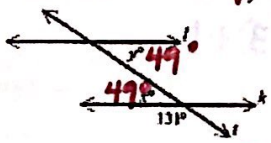
10. In the figure, $l \parallel n$ and r is a transversal. Which of the following is not necessarily true?



a. $\angle 8 \cong \angle 2$ alt ext
b. $\angle 2 \cong \angle 6$ corresponding
c. $\angle 5 \cong \angle 3$ alt interior
d. $\angle 7 \cong \angle 4$

11. In the figure below, if l and k are parallel lines, what is the value of $x+y$?

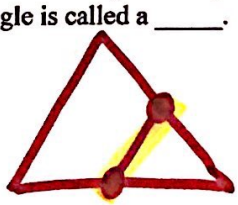


x+y
49°+49°

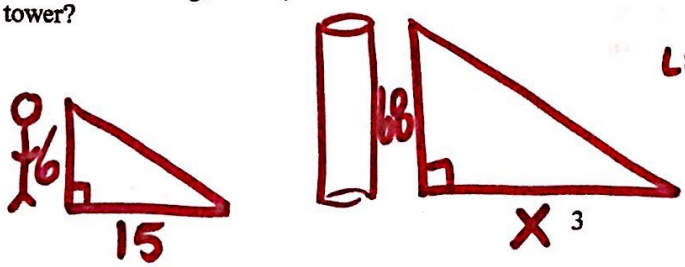
a. 180°
b. 131°
c. 98°
d. 49°

12. In a triangle, a segment connecting the midpoints of two sides of the triangle is called a _____.

a. shortcut
b. midsegment
c. centroid
d. vertex

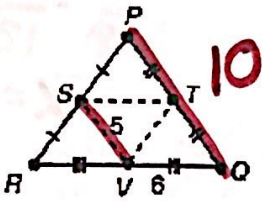


13. Late in the afternoon, a man who is 6 feet tall casts a 15-foot shadow. He is not far from a tower 68 feet tall. How long, in feet, is the shadow of the tower?



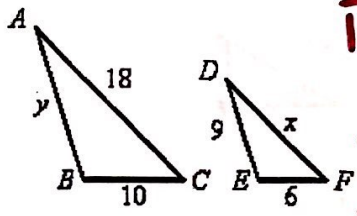
$\frac{6}{68} = \frac{15}{x}$ $x = 170$ ft

14. For the triangle shown, $VS = 5$ and $VQ = 6$. Then $PQ =$ _____.



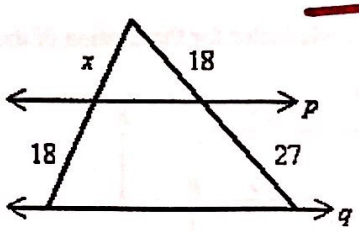
a. 11
b. 12
c. 10
d. 5

15. Given that $\Delta ABC \sim \Delta DEF$, solve for x and y.



$\frac{x}{18} = \frac{6}{10}$
$x = 10.8$
$\frac{y}{9} = \frac{10}{6}$
$y = 15$

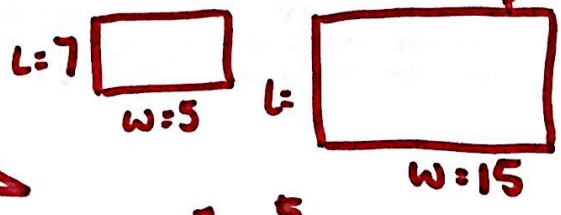
16. If $p \parallel q$, solve for x.



$\frac{x}{18} = \frac{18}{27}$
$x = 12$

17. A photo needs to be enlarged from an original with a length of 7 inches and a width of 5 inches to a size where the new width is 15 inches. What is the new length? What is the scale factor?

SF = $\frac{\text{image}}{\text{pre-image}} = \frac{21}{7}$



3
Scale Factor

$\frac{7}{x} = \frac{5}{15}$
Length = 21 inches

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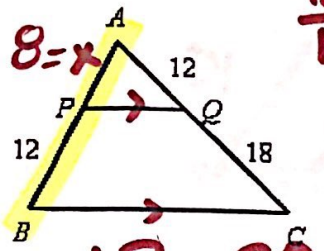
18. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of $\overline{AB}$.



8 = x

$\frac{12}{18} = \frac{x}{12}$

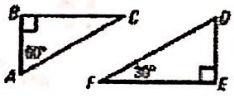
x = 8

AB = 20

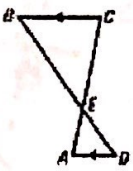
19. If $\Delta RPQ \cong \Delta JKL$, then $\overline{LJ} \cong$ ___ .

Determine whether the triangles are similar. If the are, write a similarity statement.

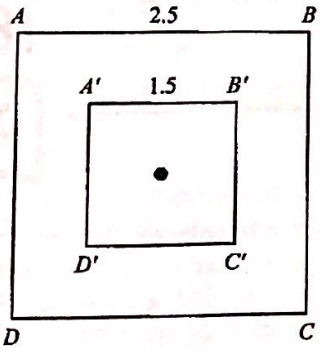
20.



21.

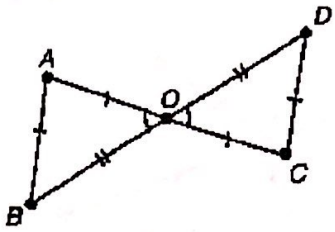


22. Give the scale factor for the dilation of the square shown.



23. A building casts a shadow 174 meters long. At the same time, a pole 6 meters high casts a shadow 18 meters long. What is the height of the building?

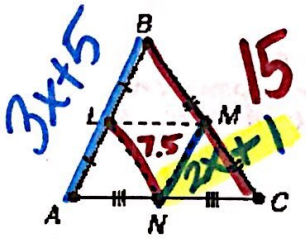
24. State two postulates or theorems that can be used to conclude that $\Delta AOB \cong \Delta COD$.



SAS

SSS

25. Refer to the figure below.



2(small) = Big

2(2x+1) = 3x+5

4x+2 = 3x+5

-3x -3x

1x + 2 = 5

-2 -2

x = 3

a. If $BC = 15$, then $LN =$ 7.5.

b. If $AB = 3x + 5$ and $NM = 2x + 1$, then $NM =$ 7.

2(3)+1

26. List the steps used to copy a given line segment.