

Kay

1. Given that $\triangle MAX \sim \triangle IZY$. Complete the following:

a. $\angle M \cong \underline{4I}$

b. $\frac{MY}{ZY} = \frac{YM}{\underline{YI}}$

c. $\angle Z \cong \underline{4A}$

d. $\triangle ZIY \cong \underline{\triangle AMX}$

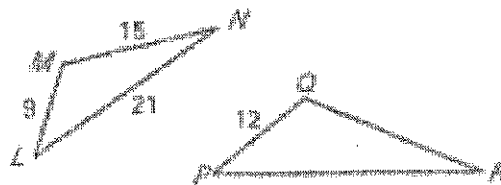
2. Given $\triangle LMN \sim \triangle PQR$. Complete the following:

a. Scale factor of $\triangle LMN$ to $\triangle PQR$. 4/3

b. $QR = \underline{20}$ and $PR = \underline{28}$.

c. What is the ratio of the perimeters? 4/3

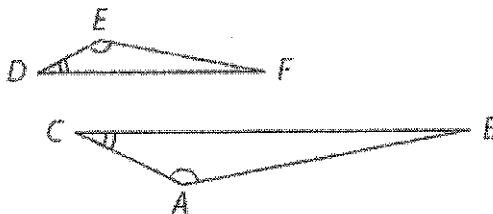
d. If $m\angle P = 40^\circ$ and $m\angle Q = 115^\circ$, then $m\angle R = \underline{25^\circ}$, $m\angle L = \underline{40^\circ}$, and $m\angle M = \underline{115^\circ}$



3. If two polygons are similar, the ratio of their areas is equal to the square of the scale factor.

4. Write a similarity statement.

$\triangle DEF \sim \triangle CAB$

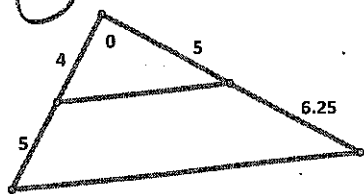


5. Which theorems are used to prove that two triangles are similar?

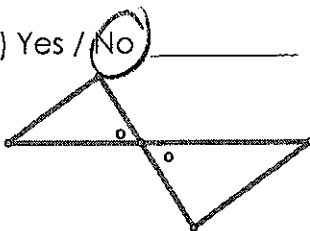
SSS, SAS, AA

6. Are the following pairs of triangles similar? If they are, then name their similarity criteria. (SSS~, SAS~, AA~)

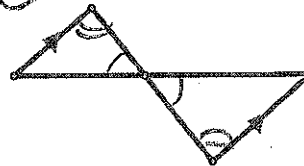
a) Yes/No SAS



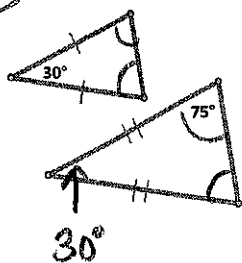
b) Yes/No No



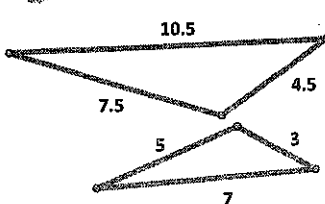
c) Yes/No AA



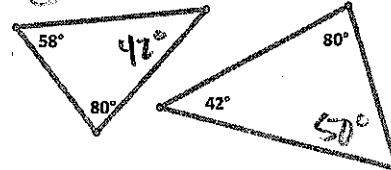
d) Yes/No SAS



e) Yes/No SSS



f) Yes/No AA



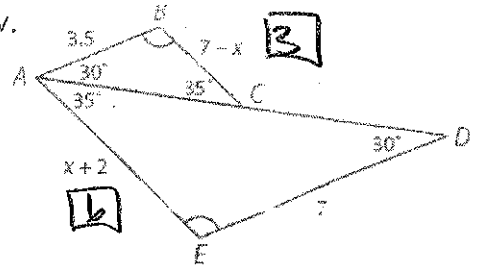
7. Find x and the length of the missing sides in the diagram below.

$$\frac{7}{3.5} = \frac{x+2}{7-x}$$

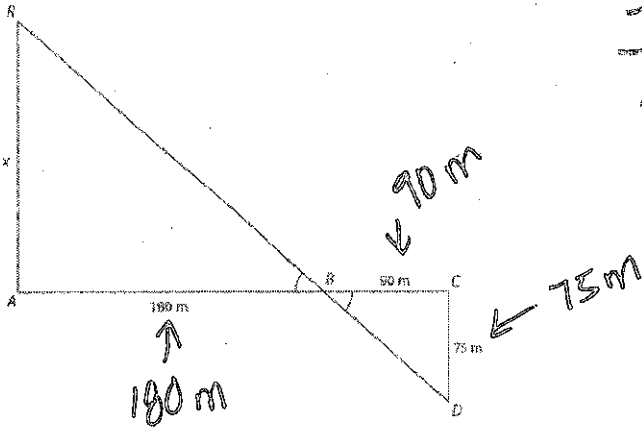
$$\boxed{x=4}$$

$$7(7-x) = 3.5(x+2)$$

$$49 - 7x = 3.5x + 7$$



8. Finding the distance across a canyon can often be difficult. A drawing of similar triangles can be used to make this task easier. Use the diagram to determine \overline{AR} , the distance across the canyon.



$$\frac{75}{x} = \frac{90}{190}$$

$$90x = 13,500$$

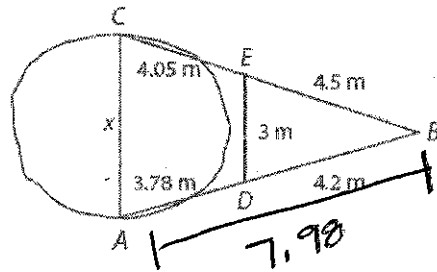
$$\boxed{x=150 \text{ m}}$$

9. To measure \overline{BC} , the distance across a crater, an archaeologist stands at point A and locates points B, C, D, and E. What is the distance across the crater?

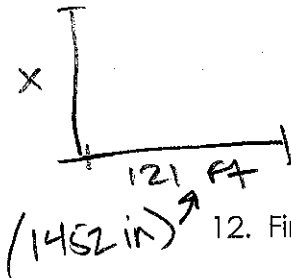
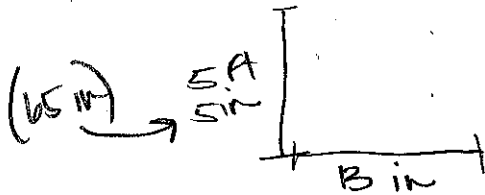
$$\frac{4.2}{3} = \frac{7.98}{x}$$

$$4.2x = 23.94$$

$$\boxed{x=5.985 \text{ m}}$$



10. Rebecca is 5 feet 5 inches tall and is standing near the Space Needle in Seattle, Washington. She casts a 13 inch shadow at the same time that the Space Needle casts a 121 foot shadow. How tall is the Space Needle?



$$\frac{65}{13} = \frac{x}{1452}$$

$$13x = 94380$$

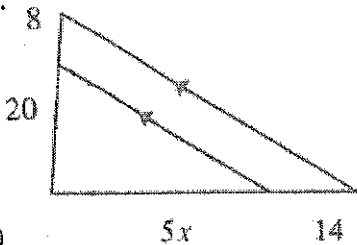
$$\boxed{x=7260 \text{ in OR } 605 \text{ ft}}$$

11. Find x .

$$\frac{8}{20} = \frac{14}{5x}$$

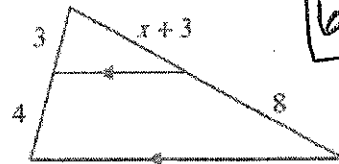
$$40x = 2800$$

$$\boxed{x=7}$$



12. Find x .

(parallel lines, proportional parts)



$$\frac{3}{4} = \frac{x+3}{8}$$

$$24 = 4x + 12$$

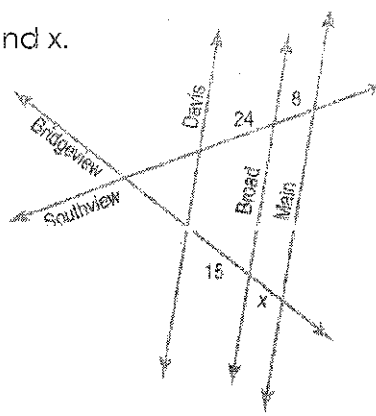
$$\boxed{x=3}$$

13. Davis, Broad, and Main Streets are parallel. Find x.

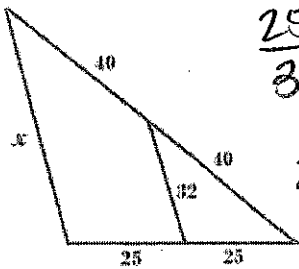
$$\frac{24}{8} = \frac{15}{x}$$

$$24x = 120$$

$$\boxed{x = 5}$$



14. Find the value of x.

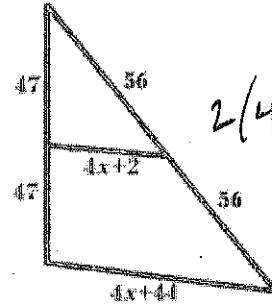


$$\frac{25}{32} = \frac{50}{x}$$

$$25x = 1600$$

$$\boxed{x = 64}$$

15. Find the length of the midsegment.



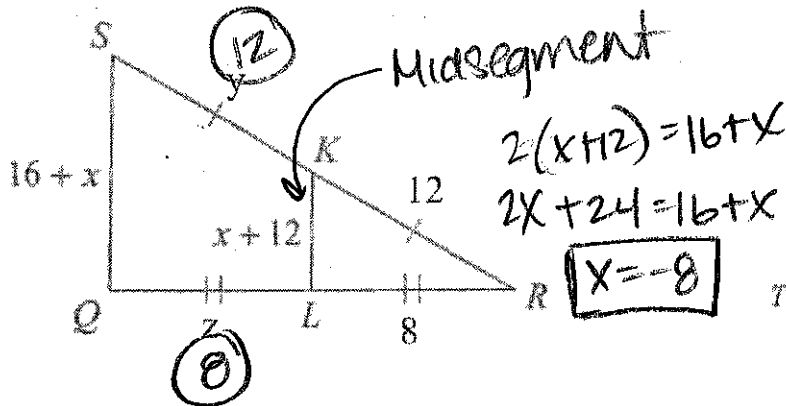
$$2(4x+2) = 4x+44$$

$$8x+4 = 4x+44$$

$$4x = 40$$

$$\boxed{x = 10}$$

16. Find x, y, and z.

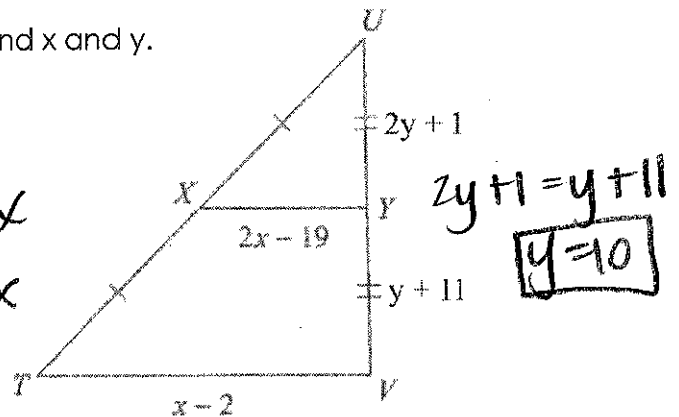


$$2(x+12) = 16+x$$

$$2x+24 = 16+x$$

$$\boxed{x = -8}$$

17. Find x and y.



$$2y+1 = y+11$$

$$\boxed{y = 10}$$

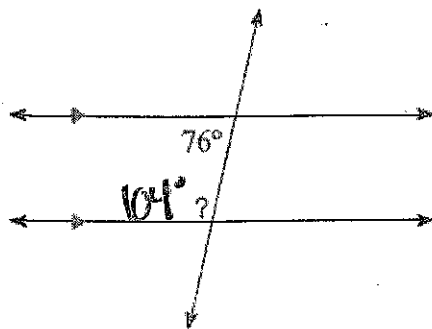
$$2(2x-19) = x-2$$

$$4x-38 = x-2$$

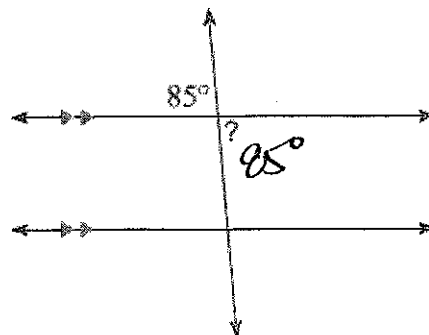
$$\boxed{x = 12}$$

For numbers 18 – 25, name the angle pair, whether they are congruent or supplementary, and then solve for x or the missing angle.

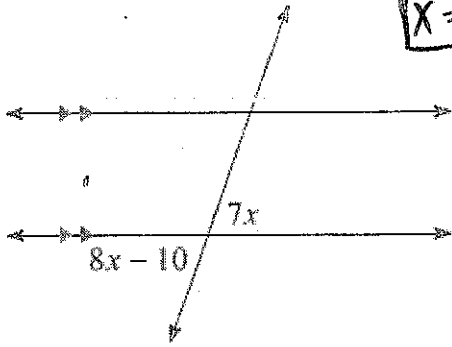
18.



19.



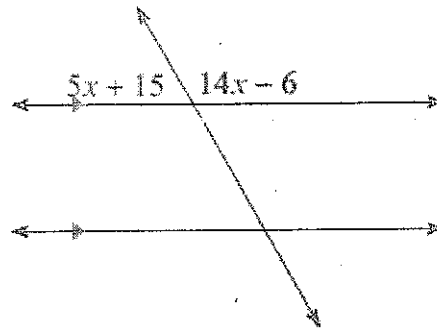
20.



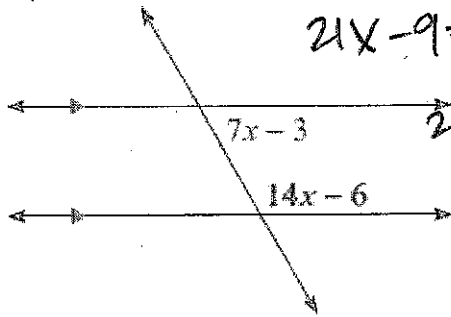
$$8x - 10 = 7x$$

$$\boxed{x = 10}$$

21.



22.



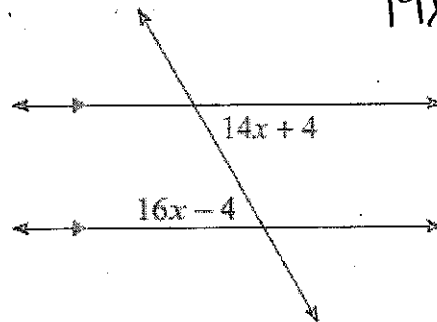
$$7x - 3 + 14x - 6 = 180$$

$$21x - 9 = 180$$

$$21x = 189$$

$$\boxed{x = 9}$$

23.

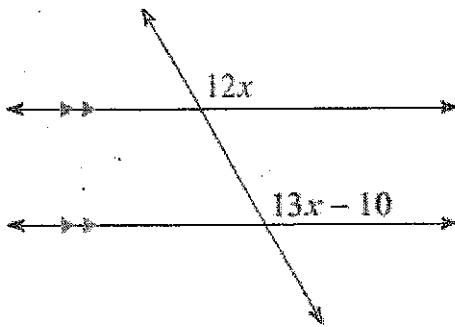


$$14x + 4 = 16x - 4$$

$$8 = 2x$$

$$\boxed{x = 4}$$

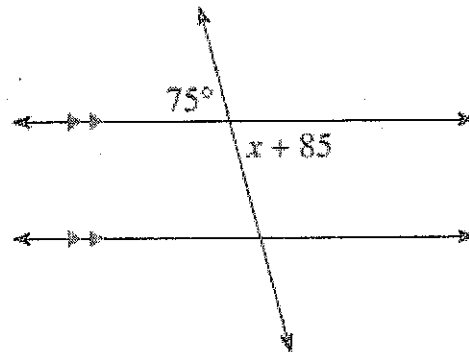
24.



$$12x = 13x - 10$$

$$\boxed{x = 10}$$

25.



$$75 = x + 85$$

$$\boxed{x = -10}$$