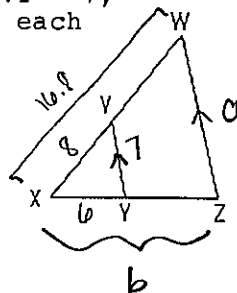


Chapter 13 (Part 1) Review

1. In $\triangle XWZ$ at the right, $\overline{VY} \parallel \overline{WZ}$. If $VY = 7$, $WX = 16.8$, $VX = 8$, and $XY = 6$. Find each length to the nearest tenth.

- a. WZ
b. XZ



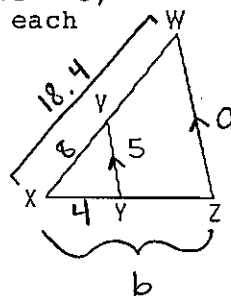
- 1) a) 14.7
b) 12.6

a) $\frac{16.8}{8} \neq \frac{a}{7}$

b) $\frac{6}{b} \neq \frac{8}{16.8}$

2. In $\triangle XWZ$ at the right, $\overline{VY} \parallel \overline{WZ}$. If $VY = 5$, $WX = 18.4$, $VX = 8$, and $XY = 4$. Find each length to the nearest tenth.

- a. WZ
b. XZ



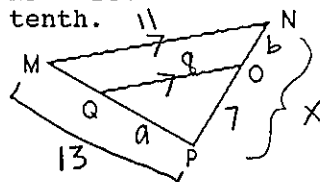
- 2) a) 11.5
b) 9.2

a) $\frac{18.4}{8} \neq \frac{a}{5}$

b) $\frac{4}{b} \neq \frac{8}{18.8}$

3. In $\triangle MNP$ at the right, $\overline{OQ} \parallel \overline{NM}$. If $MN = 11$, $PO = 7$, $OQ = 8$, and $MP = 13$. Find each length to the nearest tenth.

- a. PQ
b. ON

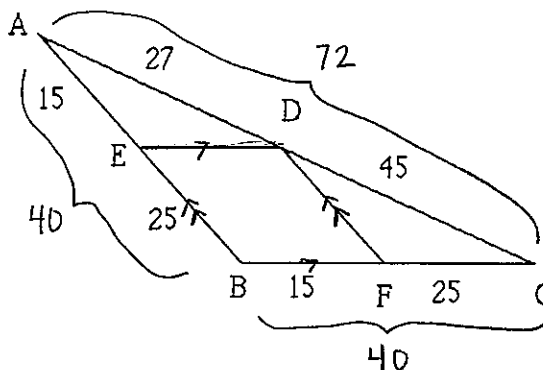


- 3) a) 9.45
b) 2.63

a) $\frac{8}{11} \neq \frac{a}{13}$

b) $\frac{x}{7} \neq \frac{11}{8}$
 $x = 9.625$
 -7
2.625

4. In the figure below, is $DEBF$ a parallelogram? Why or why not?



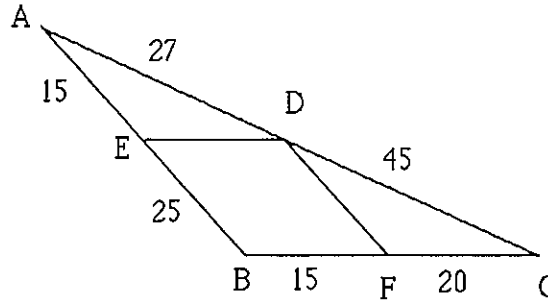
$\frac{15}{25} \stackrel{?}{=} \frac{27}{45}$
 $.6 = .6 \checkmark$
 $\frac{25}{15} = \frac{45}{27}$
 $1\frac{2}{3} = 1\frac{2}{3} \checkmark$

- 4) Since $\frac{15}{25} = \frac{27}{45}$, we know $DE \parallel BC$.
Since $\frac{25}{15} = \frac{45}{27}$, we know $DF \parallel AB$.
Since opposite sides are \parallel , $DEBF$ is a parallelogram.

5. In the figure below, is DEBF a parallelogram? Why or why not?

$$\frac{45}{27} \stackrel{?}{=} \frac{20}{15}$$

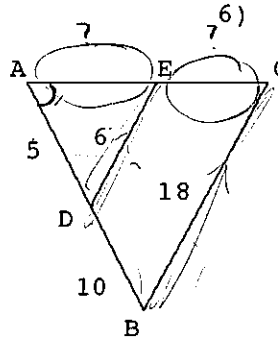
$$1\frac{2}{3} \neq 1\frac{1}{3}$$



5) No, since $\frac{45}{27} \neq \frac{20}{15}$, DF is not \parallel to AB, so DEBF can't be a parallelogram.

6. In $\triangle ABC$ at the right, is $\overline{BC} \parallel \overline{DE}$? Why or why not?

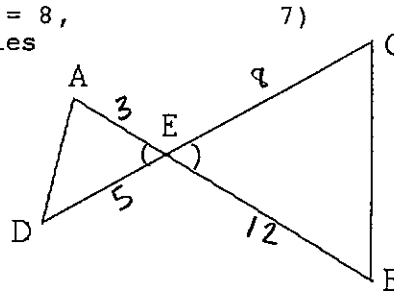
[Faint handwritten notes]



Not enough info.

7. In figure at the right, $AE = 3$, $CE = 8$, $EB = 12$ and $DE = 5$. Are the triangles similar? Justify your answer.

No, since $\frac{3}{5} \neq \frac{8}{12}$ there aren't proportional sides.



8. In figure at the right, $DE = 32$, $AE = 24$, $EB = 48$ and $CE = 36$. Are the triangles similar? Justify your answer.

$$\frac{24}{32} = \frac{36}{48}$$

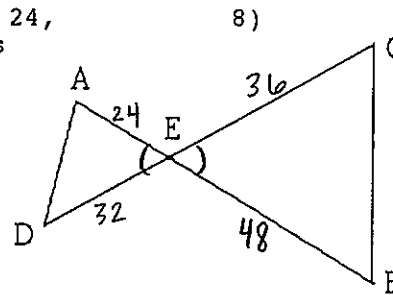
$$.75 = .75 \checkmark$$

Yes, by SAS,

$$\frac{24}{32} = \frac{36}{48} \text{ \&}$$

$$\angle AED = \angle CEB$$

since they are vertical angles.

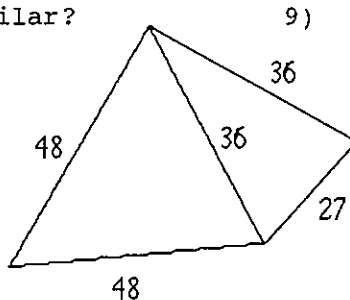


9. Are the triangles at the right similar? Justify your answer.

$$\frac{27}{36} \stackrel{?}{=} \frac{36}{48} \stackrel{?}{=} \frac{36}{48}$$

$$.75 = .75 = .75 \checkmark$$

By SSS, the Δ 's are similar.

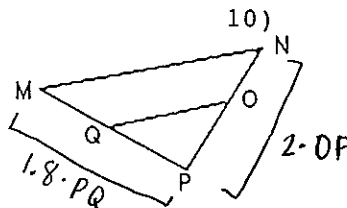


10. Use the figure at the right, is ΔOPQ similar to ΔNPM , if $MP = 1.8(PQ)$ and $NP = 2(OP)$? Justify your answer.

No since

$$\frac{PQ}{1.8 \cdot PQ} \neq \frac{OP}{2 \cdot OP}$$

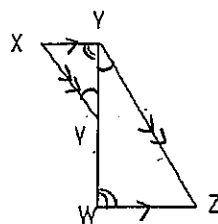
$$\frac{1}{1.8} \neq \frac{1}{2}$$



11. Are the triangles at the right similar, if $\overline{XY} \parallel \overline{WZ}$ and $\overline{XV} \parallel \overline{YZ}$? Justify your answer.

$\angle XVY$ & $\angle WYZ$ and $\angle XYV$ & $\angle YWZ$ are

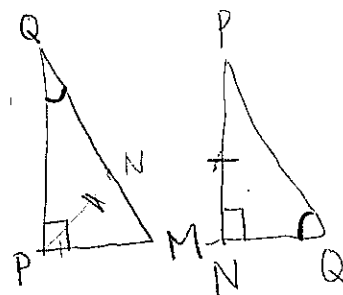
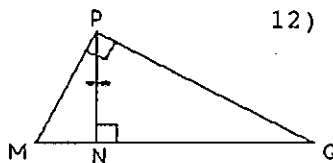
alternate interior angles.



11) Yes, by AA.

12. Consider the figure at the right, is ΔMPQ similar to ΔQNP ? Justify your answer.

Yes, by AA ($\angle MPQ = \angle PNQ = 90^\circ$, $\angle Q = \angle Q$)

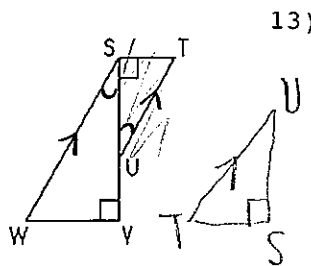


13. Are the triangles at the right similar, if $\overline{SW} \parallel \overline{TU}$? Justify your answer.

$$\angle SVW = \angle UST = 90^\circ$$

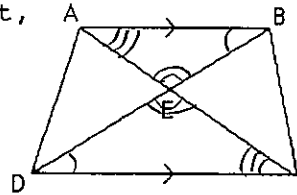
& $\angle WSV$ & $\angle SUT$ are

AAA.



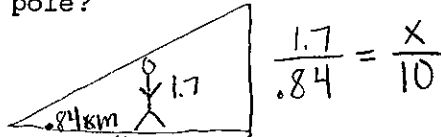
Yes, by AA.

14. Consider the figure at the right, is $\triangle ABE$ similar to $\triangle CDE$? Justify your answer.



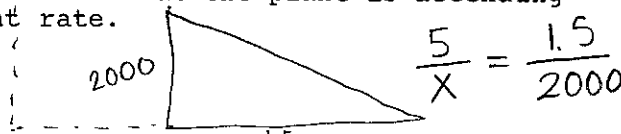
14) Yes, by AA.
 $\angle AEB = \angle DEC$ since they are vertical.
 $\angle ABE = \angle EDC$ since they are AIA.

15. A telephone pole casts a shadow that is 10 m long. At the same time a person who is 1.7 m tall casts a shadow that is 84 cm long. How tall is the telephone pole?



15) 20.24 m

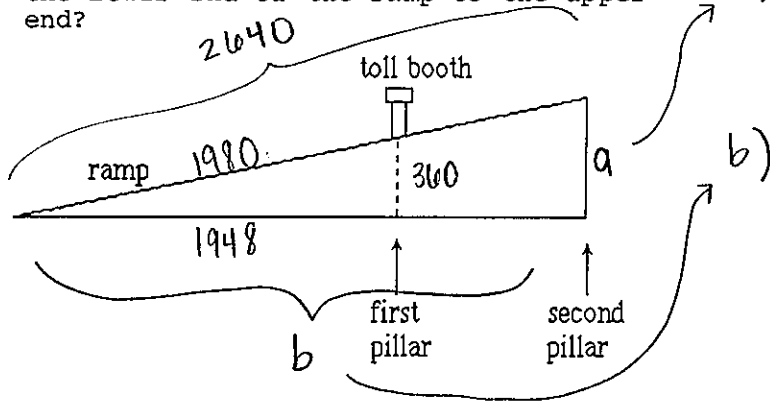
16. After takeoff, an airplane has reached an altitude of 2000 feet. If the ground distance at this point is 1.5 miles, what altitude will the plane reach when the ground distance is 5 miles? Assume that the plane is ascending at a constant rate.



16) 6,666.6 ft.

17. A toll booth is located three-fourths of the way up a 2,640 ft ramp as shown below. The first pillar supporting the toll booth is 360 ft high, and the distance on the ground from the lower end of the ramp to that pillar is 1,948 ft.

- a. Find the height of the pillar at the end of the ramp.
 b. What is the total ground distance from the lower end of the ramp to the upper end?



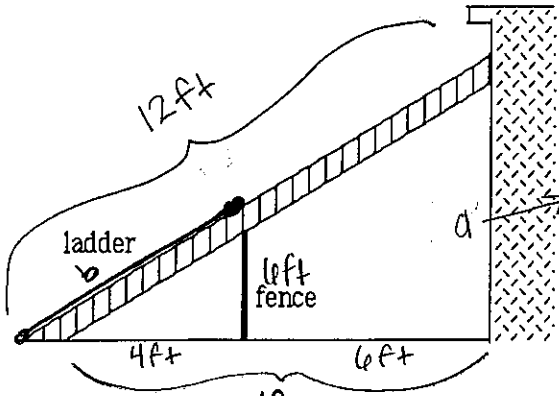
17) a) 480 ft
 b) 2597.3 ft

a) $\frac{a}{360} = \frac{2640}{1980}$

b) $\frac{1948}{b} = \frac{1980}{2640}$

18. As shown below, a 12-foot ladder leaning against a 6-foot fence touches a building. The distance from the base of the ladder to the fence is 4 feet, and the distance from the fence to the building is 6 feet.

- a. How high up the building does the ladder reach?
- b. How far is it from the base of the ladder to the point at which it rests on the fence?



a) $\frac{4}{6} = \frac{10}{a}$

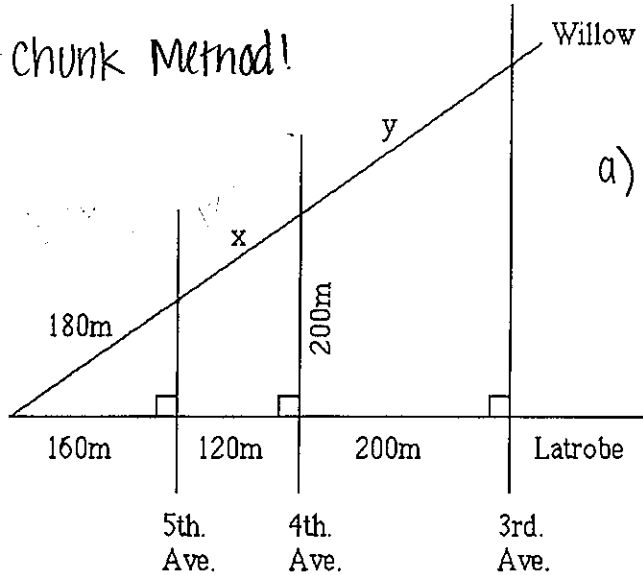
b) $\frac{b}{12} = \frac{4}{10}$

- 18) a) 15 ft
b) 4.8 ft

19. Use the street diagram shown below.

- a. Find x.
- b. Find y.

*Chunk Method!



a) $\frac{180}{x} = \frac{160}{120}$

b) $\frac{180}{y} = \frac{160}{200}$

- 19) a) 135m
b) 225m

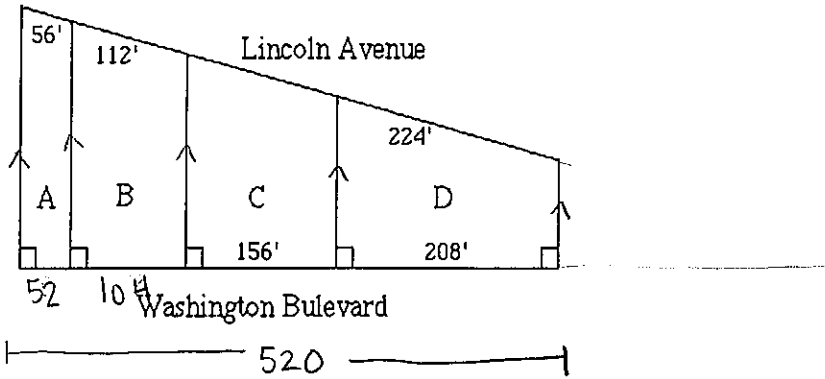
Name: _____

Hour: _____

20. Residents pay an assessment based on their frontage along Washington Boulevard. What part of the total assessment is paid by the residents of each lot?

20) a) $A = .1$ or 10%
b) $B = .2$ or 20%

- a. Lot A
- b. Lot B



$$\frac{224}{56} = \frac{208}{A}$$

$$52 = A$$

$$\begin{array}{r} 52 \\ \hline 520 \end{array}$$

$$\frac{224}{112} = \frac{208}{B}$$

$$104 = B$$

$$\begin{array}{r} 104 \\ \hline 520 \end{array}$$