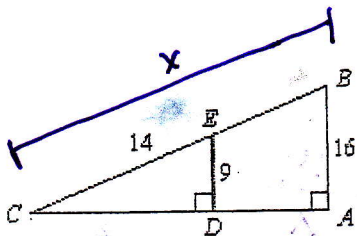


Name: Key

unit 7 - Similar Figures Review

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



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

$$9x = 224$$

$$x = 24.9$$

a. 24.9

b. 3.1

c. 10.9

d. 27.1

- C 2. A map has a scale of $\frac{1}{2}$ inch : 28 miles. If the actual distance between the two cities is 448 miles, how far apart are they on the map?

a. 16 inches

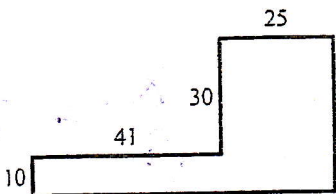
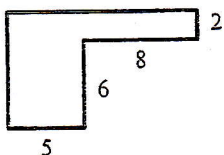
b. 32 inches

c. 8 inches

d. 4 inches

$$\frac{.5}{28} = \frac{x}{448}$$

- B 3. Are the two polygons similar? (They are not drawn to scale, but assume all angles are 90° .) If not, explain why.



$$\frac{2}{10} \neq \frac{8}{41} = \frac{6}{30} = \frac{5}{25}$$

not \neq

a. not enough information to tell

c. Yes

b. No; $\frac{5}{25} \neq \frac{8}{41}$

d. No; $\frac{5}{25} \neq \frac{6}{10}$

- B 4. If two polygons are SIMILAR, then the corresponding angles must be _____.

a. linear pairs

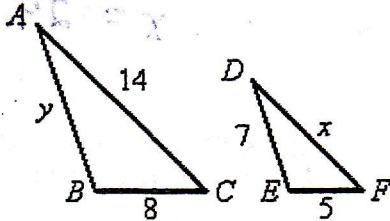
c. complementary

b. congruent

d. supplementary

- D 5. If two polygons are SIMILAR, then the corresponding sides must be ____.
- a. similar
 - b. congruent
 - c. parallel
 - d. proportional

- A 6. Given that $\triangle ABC \sim \triangle DEF$, solve for x and y .



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

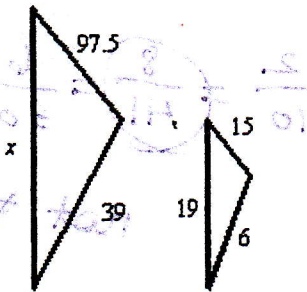
$$x = 8.75$$

$$\frac{8}{5} = \frac{y}{7}$$

$$y = 11.2$$

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

- D 7. The triangles below are similar. Find x .

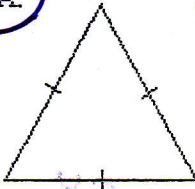


$$\frac{x}{19} = \frac{39}{6}$$

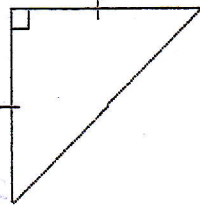
- a. 49.4
- b. 2.9
- c. 130
- d. 123.5

A 8. Which triangle is not similar to any of the others?

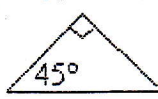
A.



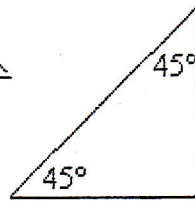
B.



C.

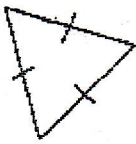


D.



C 9. Which triangle below is not similar to any of the others?

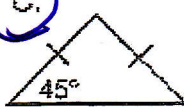
A.



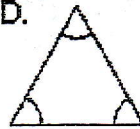
B.



C.

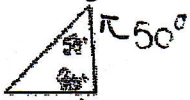


D.



A 10. Which triangle is NOT similar to any of the others?

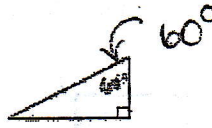
a.



b.



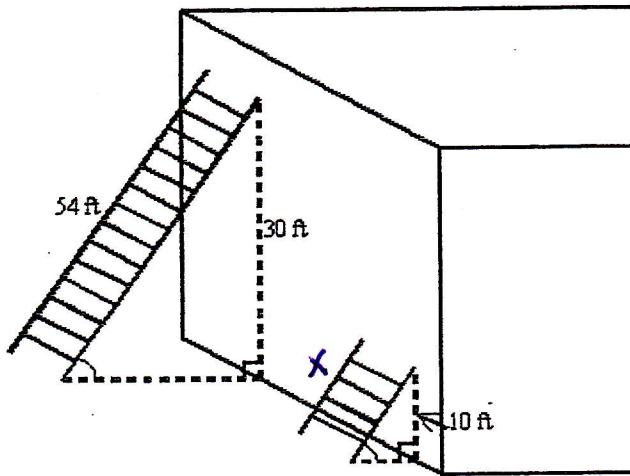
c.



d.



- A 11. Two ladders are leaning against a wall at the same angle as shown. How long is the shorter ladder?



$$\frac{30}{10} = \frac{54}{x}$$

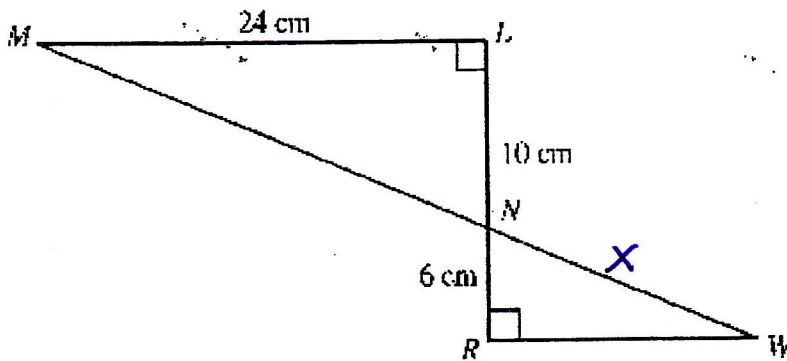
a. 18 ft

b. 36 ft

c. 22 ft

d. 8 ft

- A 12. Triangles LMN and NWR are right triangles.



$$\frac{10}{6} = \frac{24}{x}$$

$$x = 14.4$$

What is the length of \overline{NW} ?

a. 14.4 cm

b. 15.6 cm

c. 2.5 cm

d. 10 cm

- C 13. Karen wants to measure the height of the streetlight outside her house. She places a mirror on the ground 52 feet from the streetlight, then walks backward until she is able to see the top of the streetlight in the mirror. Her eyes are 5.8 feet above the ground, and she is 14 feet from the mirror. What is the height of the streetlight to the nearest tenth of a foot?

a. 20.1

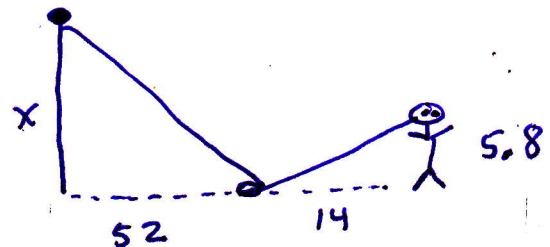
b. 14.9

c. 21.5

d. 125.5

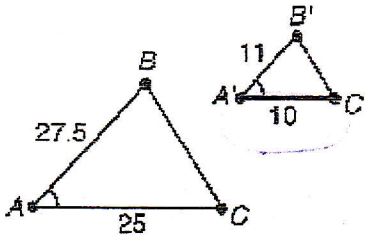
$$\frac{x}{52} = \frac{5.8}{14}$$

$$x = 21.5$$



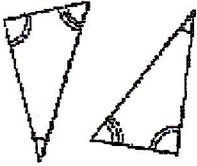
- B 14. One way to show that two triangles are similar is to show that _____.
- a. an angle of one is congruent to an angle of the other
 - b. two angles of one are congruent to two angles of the other
 - c. a side of one is congruent to a side of the other
 - d. two sides of one are proportional to two sides of the other

- A 15. Shown below is an illustration of the _____.



- a. SAS Similarity Theorem
- b. SSS Similarity Theorem
- c. AA Similarity Postulate
- d. SAS Congruence Theorem

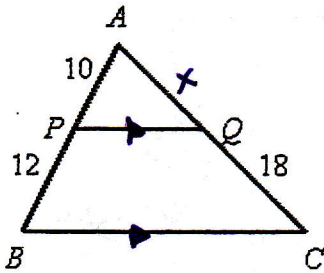
- D 16. The postulate or theorem that can be used to prove that the two triangles are similar is _____.



- a. ASA Congruence Theorem
- b. SSS Similarity Theorem
- c. SAS Similarity Theorem
- d. AA Similarity Postulate

- D 17. If the corresponding sides of two triangles are proportional, then _____.
- a. the triangles are right triangles
 - b. corresponding side lengths are equal
 - c. the triangles are congruent
 - d. the triangles are similar

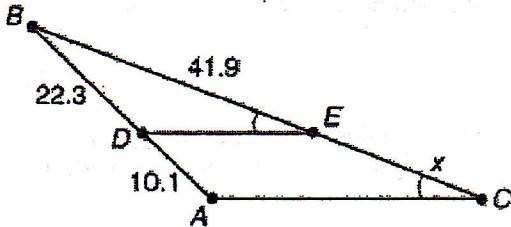
D 18. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of \overline{AQ} .



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

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

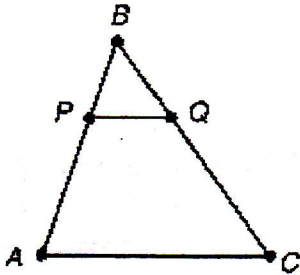
A 19. Find the value of x to one decimal place.



$$\frac{22.3}{10.1} = \frac{41.9}{x}$$

- a. 19.0** b. 2.2 c. 0.5 d. 22.5

D 20. If $\triangle ABC \sim \triangle PBQ$, then which of the following proportions is NOT true?



a. $\frac{PB}{AB} = \frac{PQ}{AC}$ ✓

b. $\frac{AP}{PB} = \frac{CQ}{QB}$ ✓

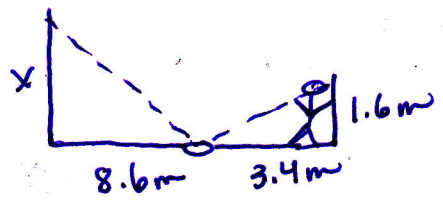
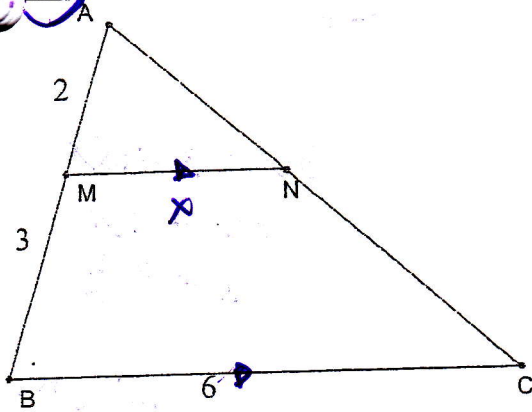
c. $\frac{AC}{PQ} = \frac{CB}{QB}$ ✓

d. $\frac{AP}{PB} = \frac{AC}{PQ}$

To estimate the height of her classroom, Nicole sights the top of the classroom wall in a mirror that she has placed on the ground. The mirror is 8.6 meters from the base of the classroom wall. Nicole is standing 3.4 meters from the mirror, and her height is about 1.6 meters. What is the approximate height of the classroom wall?

#28

- a. 4m b. 6.8m c. 8.40m d. 18.3m



$$\frac{1.6}{3.4} = \frac{x}{8.6}$$

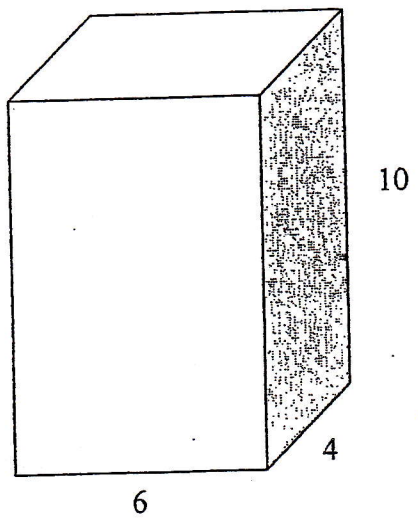
$$\frac{2}{x} = \frac{5}{6} \quad 5x = 12 \quad x =$$

In $\triangle ABC$ above, \overline{MN} is parallel to \overline{BC} . What is the length of \overline{MN} ?

#29

- a. 1.7 b. 2.4 c. 4.2 d. 5

What are possible dimensions for a rectangular prism similar to the one shown below?



#30

- a. 12 units by 8 units by 10 units b. 18 units by 12 units by 20 units c. 3 units by 2 unit by 5 units d. 4 units by 2 units by 8 units

4:6:10
reduce
2:3:5

~~a~~ 8:10:12
reduces to
4:5:6

~~b~~ 12:18:20
6:9:10

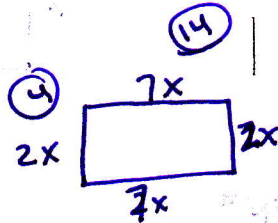
✓ c 2:3:5

~~d~~ 2:4:8
1:2:4

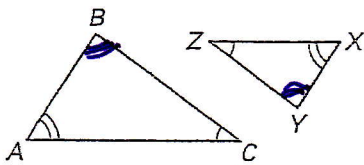
21. The perimeter of a rectangle is 36. The ratio of the lengths of the sides is 2:7. What are the lengths of the sides?

- (A) 4 and 14 (B) 6 and 16
 (C) 2 and 12 (D) 8 and 28
 (E) 13 and 19

$18x = 36$
 $x = 2$



22. The triangles shown are similar. Which of the following is *not* a correct statement?



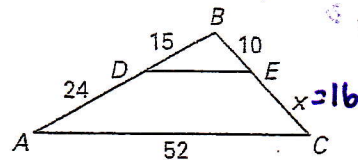
- (A) $\frac{AB}{XY} = \frac{BC}{YZ}$ (B) $\triangle ABC \sim \triangle XYZ$
 (C) $\frac{BC}{YZ} = \frac{AC}{XY}$ (D) $\frac{CA}{ZX} = \frac{BA}{YX}$
 (E) $\frac{AC}{XZ} = \frac{AB}{XY}$

24. If $\frac{5+x}{x} = \frac{15}{6}$, then what is the value of x ?

- (A) 3 (B) $3\frac{1}{3}$ (C) $3\frac{1}{4}$
 (D) $3\frac{1}{2}$ (E) 4

$30 + 6x = 15x$
 $30 = 9x$
 $x = 3\frac{1}{3}$

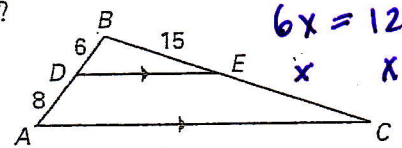
25. What is the perimeter of $\triangle ABC$?



$\frac{15}{24} = \frac{10}{x}$
 $x = 16$

- (A) 114 (B) 124 (C) 101
 (D) 121 (E) 117

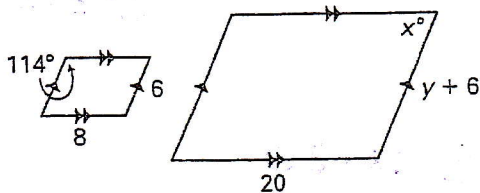
26. What is CE?



$\frac{6}{8} = \frac{15}{x}$
 $6x = 120$
 $x = 20$

- (A) 20 (B) 11.25 (C) 25
 (D) 33 (E) 14

23. The two parallelograms shown are similar. What are the values of x and y ?

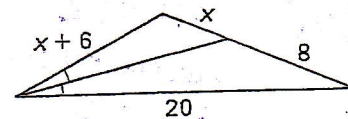


- (A) $x = 114, y = 9$ (B) $x = 66, y = 3$
 (C) $x = 114, y = 3$ (D) $x = 66, y = 9$
 (E) $x = 114, y = 10$

$\frac{8}{20} = \frac{6}{y+6}$

$8y + 48 = 120$
 $8y = 72$
 $y = 9$

27. What is the value of x in the figure shown?



$\frac{x+6}{20} = \frac{x}{8}$

- (A) 3 (B) 5 (C) 6
 (D) 4 (E) 7

$8x + 48 = 20x$
 $48 = 12x$
 $x = 4$