

You MUST show work for each problem to receive credit.

1. Write as a ratio (1 pt)

90 cents: 12 dollars

3:40

#2-3, Solve each proportion. (2 pt ea)

2. $\frac{y}{25} = \frac{8}{y}$

$y^2 = 200$

$y = \pm 14.14$

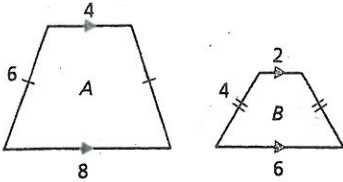
3. $\frac{6}{w+2} = \frac{w+1}{w}$

$w^2 - 3w + 2 = 0$
 $(w-1)(w-2) = 0$

$\{1, 2\}$

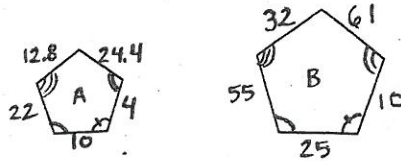
#4-5, Are the two polygons similar? If so, what is the scale factor of A to B? (2 pt. ea)

4.



no

5.

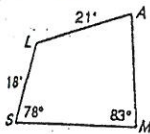


yes 2:5

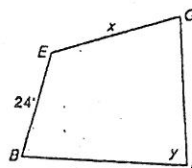
#6-8, The two polygons are similar. Solve for the indicated variable(s). (2 pt. ea)

6. $x = 28$

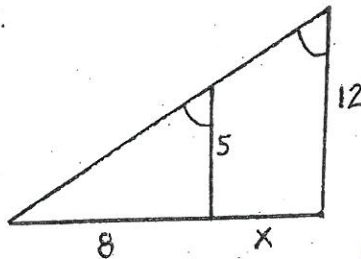
$y = 83$



$SMAL \sim BIGE$



7.

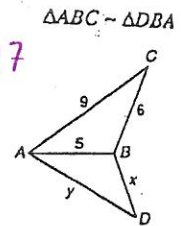


$\frac{8}{5} = \frac{8+x}{12}$

8.

$x = 4.17$

$y = 7.5$



$\frac{x}{5} = \frac{5}{6} = \frac{y}{9}$

#9-12, $\triangle ABC \sim \triangle DEF$. Decide whether each statement is true. A diagram will help. (1 pt. ea)

9. $\frac{AB}{DE} = \frac{AC}{DF}$ T

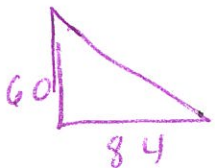
10. $\angle B \cong \angle E$ T

11. $\frac{AB}{DE} = \frac{EF}{BC}$ F

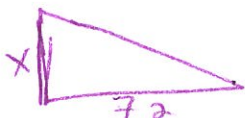
12. $\frac{DF}{AC} = \frac{EF + DE + DF}{BC + AB + AC}$ T

#13-16, Solve each problem, if possible. A diagram will help. (3 pt)

13. Five foot Naomi casts an 84-inch shadow. How tall is her friend if her shadow at the same time is one foot shorter than Naomi's



4.29 ft
or
51.43 in



$\frac{60}{84} = \frac{x}{72}$

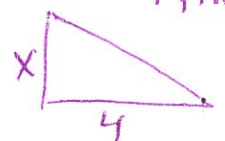
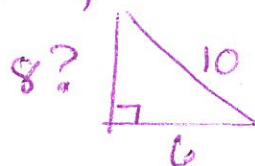
Not 6.67 m

14. A rope from the tip of a volleyball pole reaches all the way down to the end of the pole's shadow a distance of 10 meters. The length of the shadow is 6 meters. How tall is a nearby football goal post if its shadow is 4 meters?

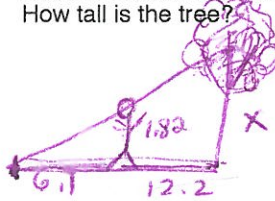
$\frac{8}{6} = \frac{x}{4}$

5.33 m

not correspond
find? by
Pythag



15. Brooke, who is 1.82 meters tall, wishes to find the height of the tree in her backyard. She walks 12.2 meters from the tree along the shadow of the tree until she's in a position where the tip of her shadow exactly overlaps the tip of the tree's shadow. She is now 6.1 meters from the end of the shadows. How tall is the tree?

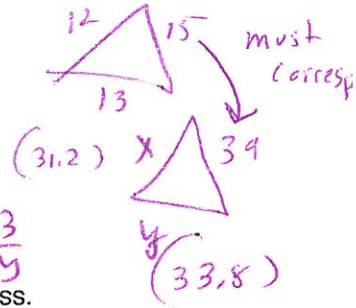


$$\frac{6.1}{1.82} = \frac{12.2}{x}$$

5.46 m

16. A triangle with sides of 12, 15, and 13 cm. is similar to a triangle with a longest side of 39 cm. What is the perimeter of the larger triangle?

104 cm



$$\frac{15}{39} = \frac{12}{x} = \frac{13}{y}$$

17. The ratio of boys to girls in one of my Geometry class is 2:3. There are 30 students in the class. How many boys and girls are in the class? (2 pt)

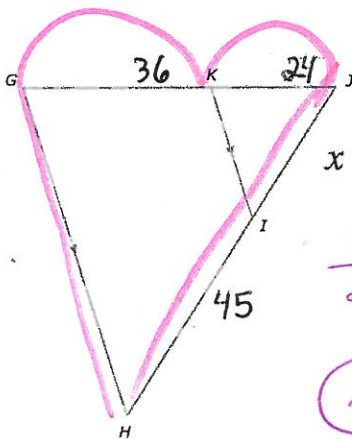
12 boys
18 girls
2:3

18. During the 1986 season, when Pam Revell went to see the NY Mets play, they ended the season with 108 wins. Their regular season consisted of 162 games. What was their win-loss ratio? (2 pt)

2:1

#19-22, Solve for x. When can you use Triangle Proportionality Theorem (Parallel Theorem) and when can't you? (2 pt ea)

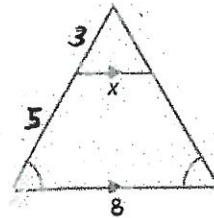
19.



$$\frac{x}{24} = \frac{45}{36}$$

x = 30

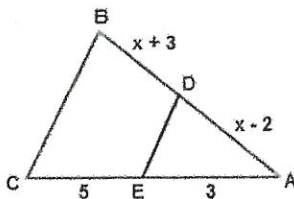
20.



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

3 = x

21. $\overline{BC} \parallel \overline{DE}$

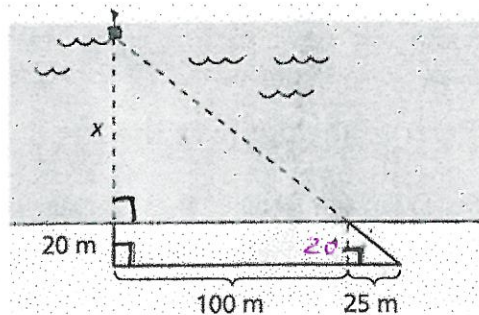


$$\frac{3}{x-2} = \frac{5}{x+3}$$

$$3x+9 = 5x-10$$

19 = 2x
9.5 = x

22.



$$\frac{20}{25} = \frac{x+20}{125}$$

$$2500 = 25x + 500$$

2000 = 25x
80 = x