Name:_____

For 1–3, identify whether each of the following pairs of ratios form a proportion. Show your work. Put Yes if it is or No if it is not.

1. $\dfrac{3}{5} = \dfrac{7}{9}$

2. $\dfrac{5}{20} = \dfrac{2}{8}$

3. $\dfrac{38}{6} = \dfrac{13}{2}$

#1 answer: _____   #2 answer: _____   #3 answer: _____

For 4–10, solve each of the following proportions. Show your work and give exact answers!

4. $\dfrac{7}{12} = \dfrac{x}{11}$

5. $\dfrac{4}{x} = \dfrac{7}{8}$

#4 answer: _____   #5 answer: _____

6. $\dfrac{x+1}{3} = \dfrac{x-4}{2}$

7. $\dfrac{x-4}{5x+3} = \dfrac{5}{10}$

#6 answer: _____   #7 answer: _____

For 8–11, set up and solve the proportion. Then answer the question to the nearest whole number.

8. Andy drove 400 mi in 6 hours. At this rate how long would it take Andy to drive 600 miles?

#8 answer: _____

9. In 2004, Kobayashi (the famous hot dog eater) ate 54 hot dogs in 12 minutes (a new world record). At this rate, how many hot dogs could he eat in 15 minutes?

#9 answer: _____

10. A recent survey showed that 4 out of 25 teens prefer orange juice over apple juice. How many of the 1,200 teens at the high school would you expect to prefer orange juice?

#10 answer: _____

11. A telephone booth 7 ft tall cast a shadow 20 ft long. At the same time, a nearby fire hydrant casts a shadow 8 ft. long. Find the height of the fire hydrant.

#11 answer: _____

For 12–14, identify each unit rate. Show your work. Use a horizontal fraction bar in your answer.

12. 108 skittles in 9 bags

13. A water pump moves 35 gallons of water in 4 seconds

#12 answer: _____

#13 answer: _____

14. Store A is selling 10 rolls of toilet paper for $5.50, while store B is selling 32 rolls for $17.00. Write down each unit rate to the nearest ¢ and circle the one that is the better deal.

Store A Unit Rate: _____

Store B Unit Rate: _____

For 15–19, plot each ordered pair on the coordinate. Label each point, and label each axis..

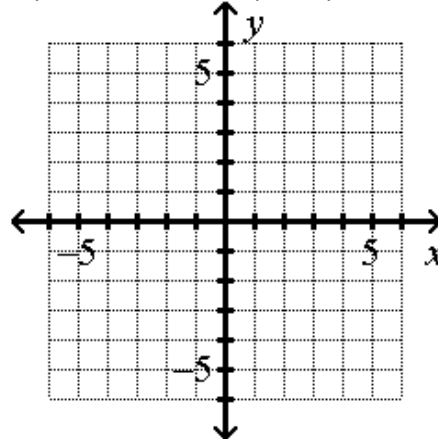15. A(-6, 5)   16. B(-6, 0)   17. C(-2,-5)   18. D(6, -1)   19. E(2, 3)

For 20–23, use the following information. A boy spends $2 on 4 roses for his crush.
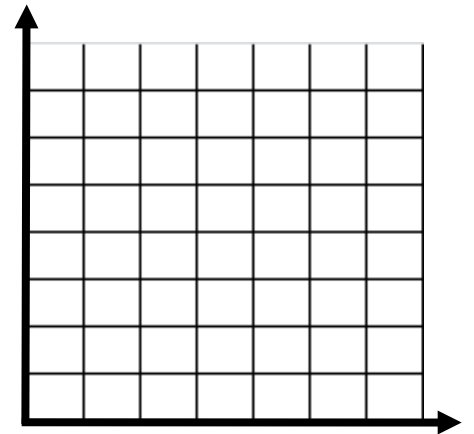
20. Identify the Unit Rate?

#20 answer: _____

21. Complete the table

x (roses)	y ($)
1	
2	
3	
4	
5	
6	

22. Graph the Unit Rate by using the table. Label!

23. Create an equation for the graph.

#23 answer: _____

For 24–27, convert the following units using the information provided below. Show work!

24. How many km are in 6 miles? (Nearest hundredth)

25. How many mi is 17,200 ft? (Nearest hundredth)

2.21 lbs = 1 kg
1,000 g = 1 kg
16 oz = 1 lb
1 ton = 2,000 lbs

8 oz = 1 cup
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gal

#24 answer: _____
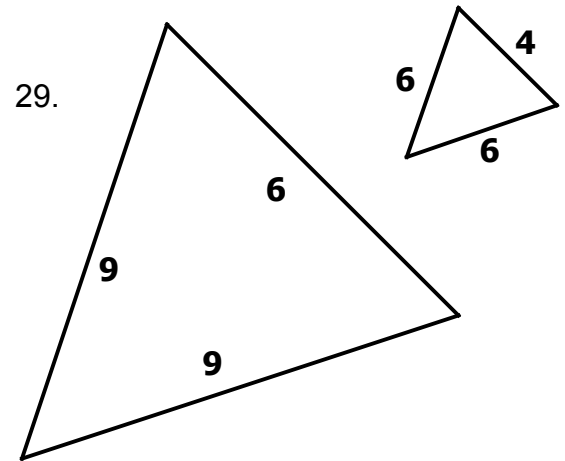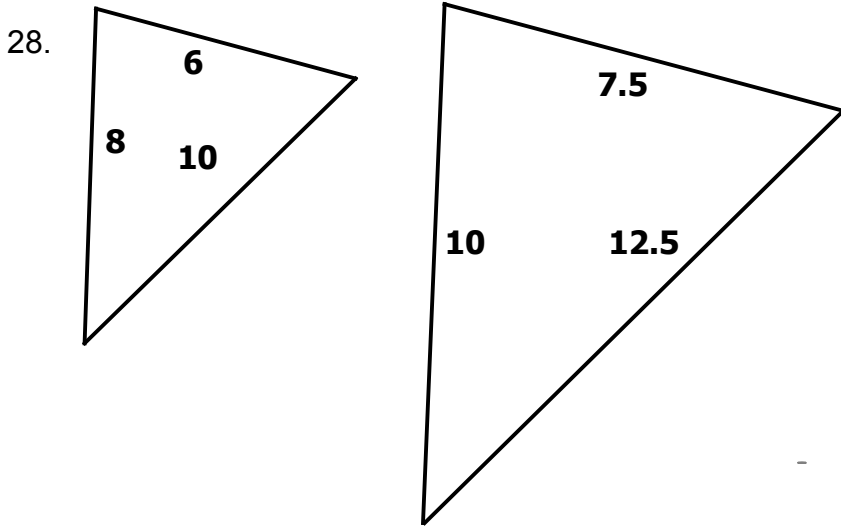
1 mile = 5,280 ft
1.61 km = 1 mile
1,000 m = 1 km

#25 answer: _____

26. How many g are in 24–lbs? (Nearest hundredth)

27. How many m are in .75 mi? (Nearest tenth)

#26 answer: _____

#27 answer: _____

For 28 & 29, show your work mathematically to identify if the two figures are similar. If they are similar, circle "yes" in the answer space. If they are not, circle "no" in the answer space. Lastly, the figures that are similar, write down the scale factor in the answer space, otherwise leave it blank.
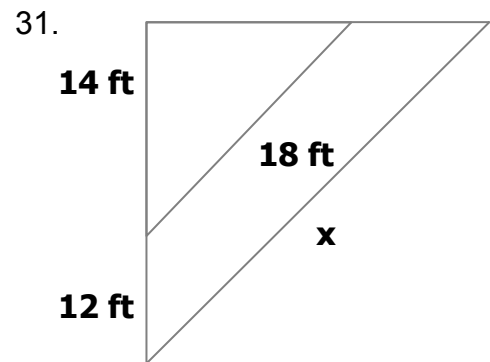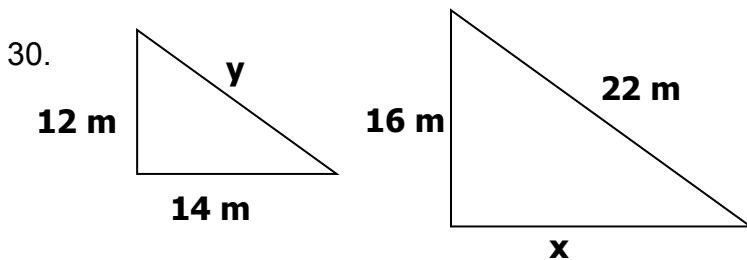
28.

6

8 10

7.5

10   12.5

29.

4

6

6

6

9

9

#28 answer: YES   or   NO

#29 answer: YES   or   NO

#28 scale factor: _____

#29 scale factor: _____

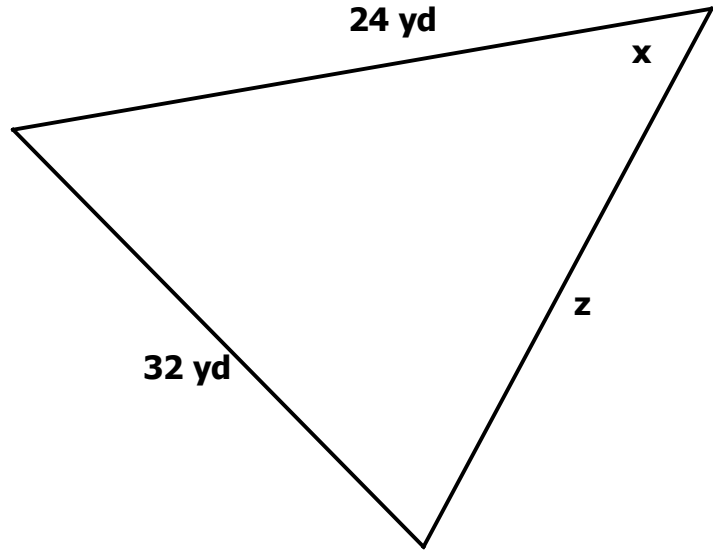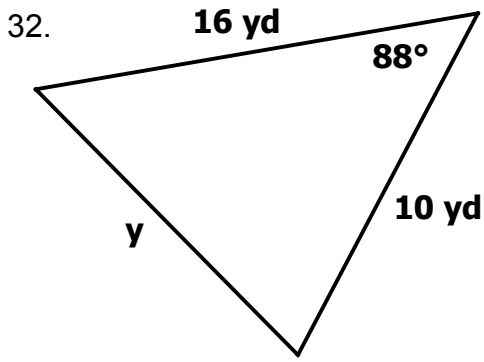For 30 & 31, evaluate the value of x and y in each pair of similar figures below. Show a proportion!

30.

y

12 m

14 m

16 m

22 m

x

31.

14 ft

18 ft

12 ft

x

#30 x–value: _____
(Estimate to the nearest tenth)

#31 x–value: _____
(Estimate to the nearest tenth)

#31 y–value: _____ (Estimate to the nearest tenth)

For 32, the triangles are similar. Evaluate the values of x, y and z. Show your work. (Estimate to the nearest tenth)
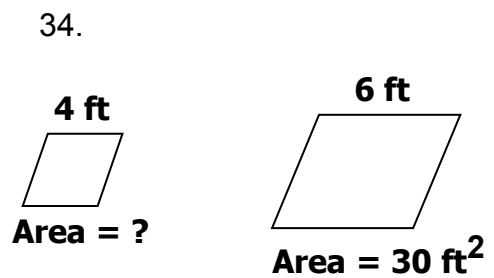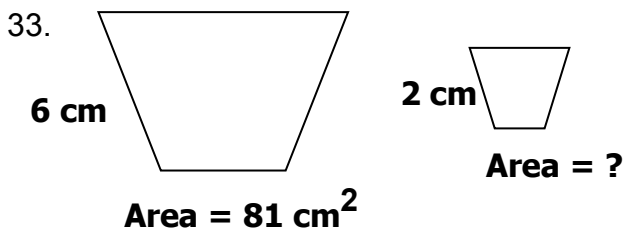
32.

16 yd

88°

10 yd

y

24 yd

x

z

32 yd

#32 x–value: _____   #32 y–value: _____   #32 z–value: _____

For 33 & 34, evaluate the missing area in each pair of similar figures below. Show your work.
(Estimate to the nearest tenth)

33.

6 cm

2 cm

Area = ?

Area = 81 cm^2

34.

4 ft

6 ft

Area = ?

Area = 30 ft^2

#33 answer: _____   #34 answer: _____