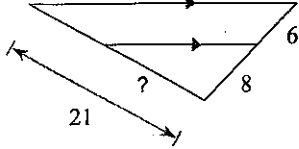


Practice Test - Yes!

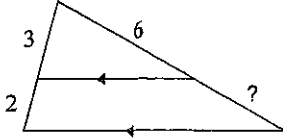
Find the missing length indicated.

1) 

$$\frac{8}{x} = \frac{14}{21}$$

$$14x = 168$$

$$\boxed{x = 12}$$

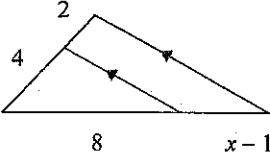
2) 

$$\frac{3}{2} = \frac{6}{x}$$

$$3x = 12$$

$$\boxed{x = 4}$$

Solve for x.

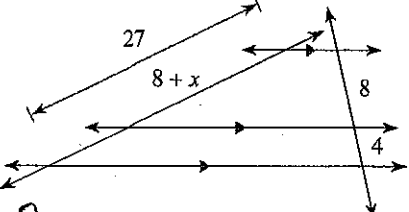
3) 

$$\frac{8}{4} = \frac{x-1}{2}$$

$$\boxed{x = 5}$$

$$16 = 4x - 4$$

$$20 = 4x$$

4) 

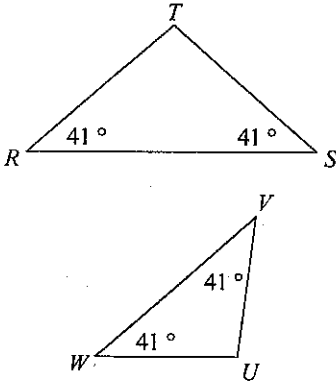
$$\frac{8+x}{27} = \frac{8}{12}$$

$$96 + 12x = 216$$

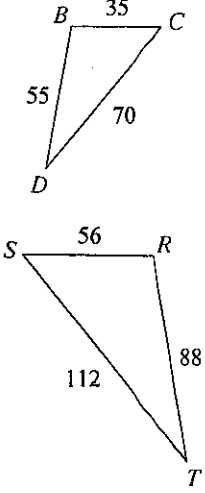
$$12x = 120$$

$$\boxed{x = 10}$$

State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

5) 

$\triangle RST \sim \triangle WVU$
AA~

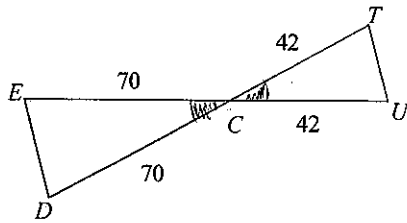
6) 

$$\frac{35}{56} = \frac{55}{112} = \frac{70}{88}$$

$$0.625 = 0.625 = 0.625$$

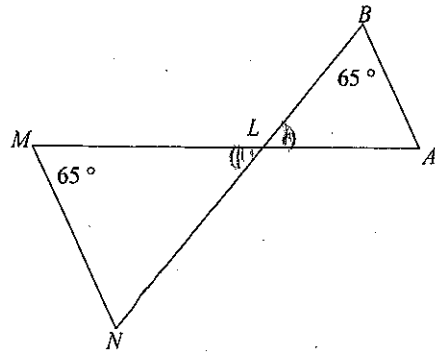
$\triangle RST \sim \triangle BCD$
SSS~

7)



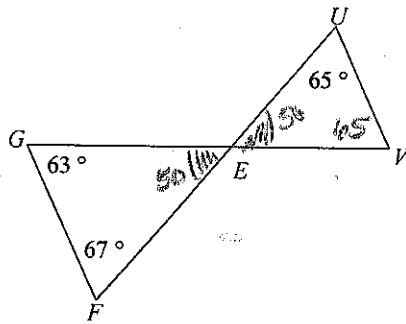
$\Delta CDE \sim \Delta CTU$
 SAS ~

8)



$\Delta LMN \sim \Delta LBA$
 AA ~

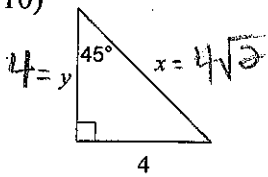
9)



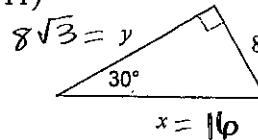
$\Delta EFG \sim \Delta EUV$

Find the missing side lengths. Leave your answers as radicals in simplest form.

10)

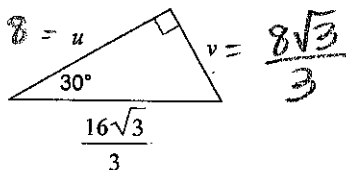


11)

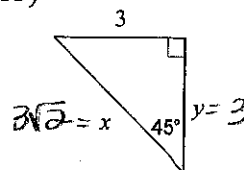


$\frac{24}{3} \leftarrow \frac{2\sqrt{3} \cdot \sqrt{3}}{3}$

12)



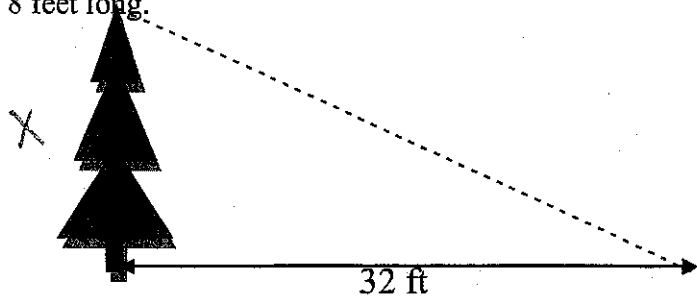
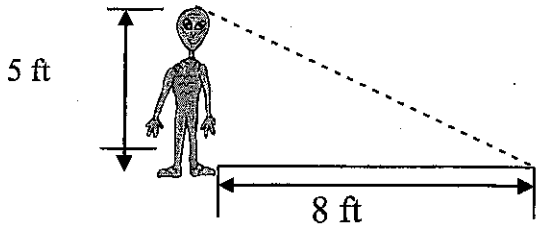
13)



$\frac{2x}{2} = \frac{16\sqrt{3}}{3}$

$x = \frac{16\sqrt{3}}{3}$

1. Lance the alien is 5 feet tall. His shadow is 8 feet long.



At the same time of day, a tree's shadow is 32 feet long. What is the height of the tree?

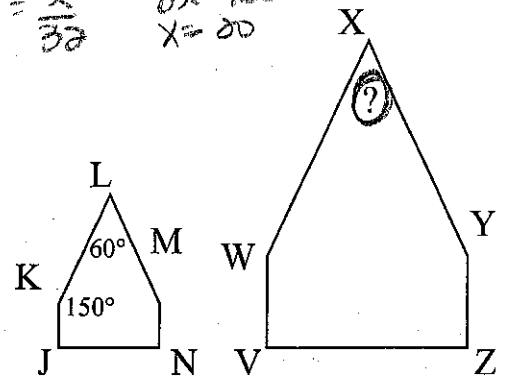
- a) 20 feet b) 24 feet c) 29 feet d) 51 feet

$\frac{5}{8} = \frac{x}{32}$ $8x = 160$
 $x = 20$

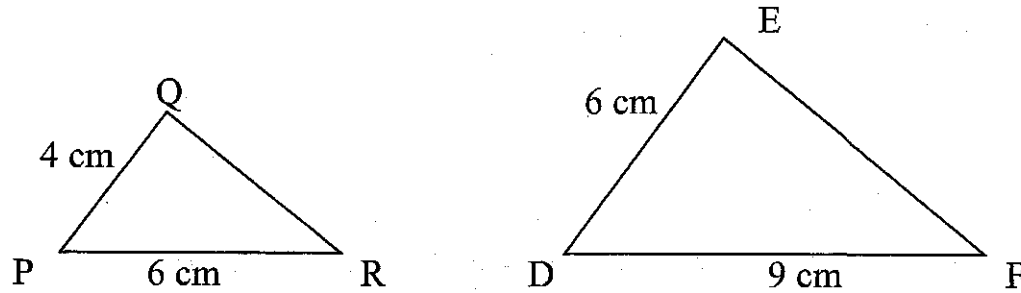
2. Pentagon JKLMN is similar to pentagon VWXYZ.

What is the measurement of angle X?

- a) 30° b) 60° c) 150° d) 120°



3. Triangle PQR is similar to triangle DEF as shown.



Which describes the relationship between the corresponding sides of the two triangles?

- a) $\frac{PQ}{DE} = \frac{4}{6}$ ~~b) $\frac{PQ}{DE} = \frac{6}{4}$~~ c) $\frac{PQ}{EF} = \frac{4}{9}$ d) $\frac{PR}{DE} = \frac{6}{6}$

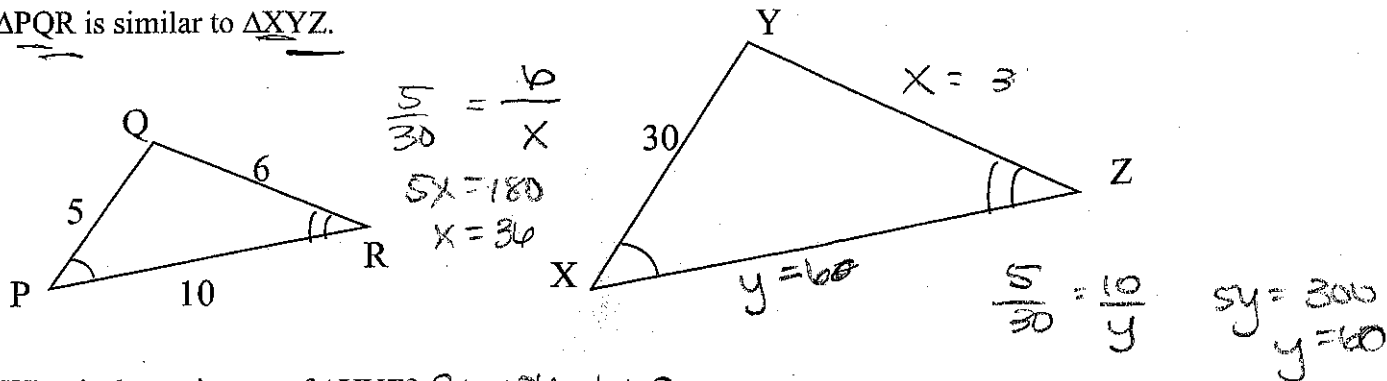
A six-foot-tall person is standing next to a flagpole. The person is casting a shadow $1\frac{1}{2}$ feet in length, while the flagpole is casting a shadow 5 feet in length. How tall is the flagpole?

- a) 30 ft b) 25 ft c) 20 ft d) 15 ft

The angle of the roof on Kaya's dollhouse is 56°. She built a scale model of the dollhouse with a scale ratio of 1 : 4. What is the measure of the angle of the roof of the model?

- a) 14° b) 34° c) 56° d) 224°

6. $\triangle PQR$ is similar to $\triangle XYZ$.

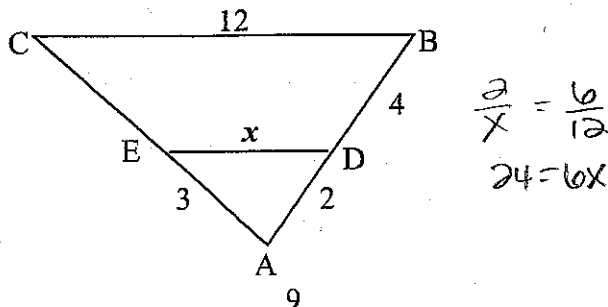


What is the perimeter of $\triangle XYZ$? $30 + 30 + 60$.

- a) 21 cm b) 63 cm c) 105 cm **d) 126 cm**

7. If triangles ADE and ABC shown in the figure to the right are similar, what is the value of x ?

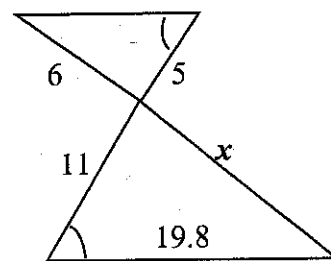
- a) 4** b) 5 c) 6 d) 8 e) 10



8. In the figure to the right, the two triangles are similar. What is the value of x ?

- a) 12.4 **b) 13.2** c) 14 d) 18.6 e) 22.1

$\frac{6}{x} = \frac{5}{11}$
 $66 = 5x$

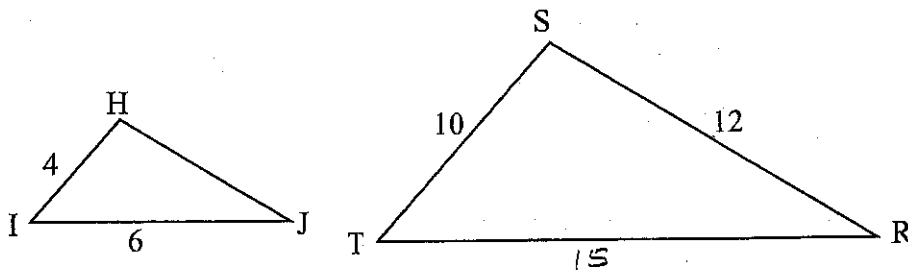


~~X~~ Mr. Smith is having some photos enlarged for his studio. He wants to enlarge a photo that is 5 inches by 7 inches so the dimensions are 3 times larger than the original. How many times larger than the original photo will the area of the new photo be?

- a) 3 b) 6 c) 9 d) 30

10. $\triangle HIJ$ is similar to $\triangle STR$.

What is the perimeter of $\triangle STR$?



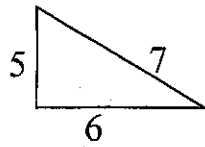
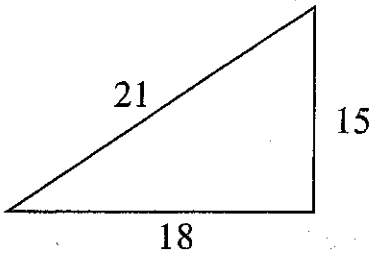
- a) 32 **b) 37** c) 40 d) 42 e) 120

$\frac{4}{10} = \frac{6}{x}$
 $4x = 60$
 $x = 15$

11. Ryan and Kathy each drew a triangle with an angle of 20 degrees. Under which condition would the triangles be similar?

- a) if both are right triangles** AA ~
~~c) if the triangles have the same area~~ b) if both are obtuse triangles
~~d) if the triangles have the same perimeter~~

12.



	Perimeter	Area
Left	54	135
Right	18	15

Scale Factor: $\frac{1}{3}$ Perimeter Ratio: $\frac{18}{54} = \frac{1}{3}$ Area Ratio: $\frac{15}{135} = \frac{1}{9}$
 $L \rightarrow R$
 $P \rightarrow I$
 $(SF)^2$

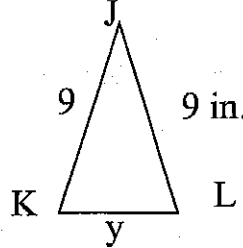
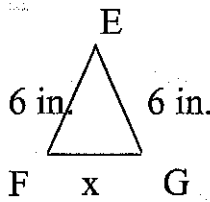
13. Two similar triangles have a scale factor of $\frac{2}{3}$. The area of the larger triangle is 12 cm^2 . What is the area of the smaller triangle?

$(SF)^2 = \frac{4}{9}$ $\frac{x}{12} = \frac{4}{9}$ $9x = 48$
 $x = 5.3$

14. If the length of each side of a triangle is cut to $\frac{1}{3}$ of its original size, what happens to the area of the triangle?

Fill in the blank: The new area is $\frac{1}{9}$ of the original area.

15. For the two triangles below to be similar, which of the following must be true?



$\frac{6}{9} = \frac{x}{y}$
 $\frac{6y}{9} = \frac{9x}{9}$
 $\frac{2y}{3} = x$
 $\frac{2}{3}y = x$

- A) $x = \frac{2}{3}y$ B) $x = \frac{3}{2}y$ C) $x = 3y$ D) $x = y$

16. In 2000, the average male television viewer watched about 22 hours of television in 7 days. About how many hours of television did the average male viewer watch in 31 days?

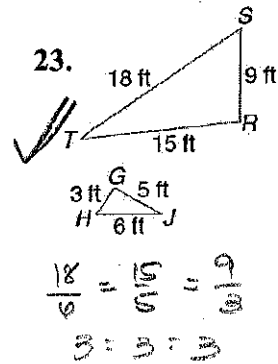
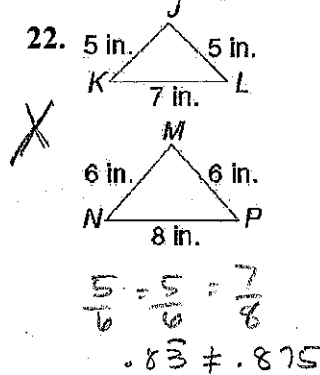
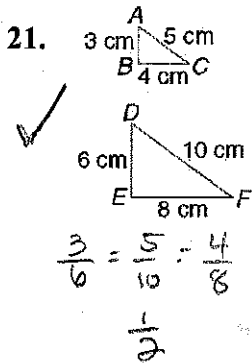
17. You need 2 gallons of juice for every 12 people attending the open house. How many gallons of juice would be need for 156 people?

18. Last week Geraldo bought 7 pounds of apples for \$5.95. This week apples are the same price, and he buys 4 pounds. How much will he pay?

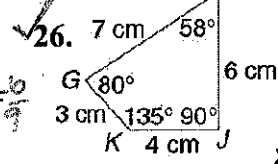
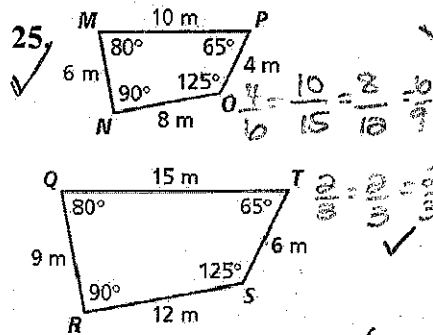
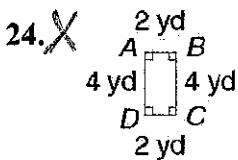
19. A fruit punch is made with 32 ounces of ginger ale for every 12 ounces of frozen orange juice concentrate. How much ginger ale should you use for 30 ounces of orange juice concentrate?

20. Aretha can type 55 words per minute. At that rate, how long will it take her to type a letter containing 935 words?

Use ratios to determine whether the triangles are similar.



Use the properties of similarity to determine whether the figures are similar.



$\frac{2}{6} = \frac{4}{8}$
 $\frac{1}{3} \neq \frac{1}{2}$

congruent angles ✓
 Not proportionate sides ✗

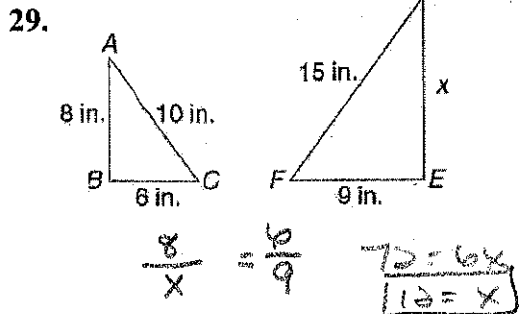
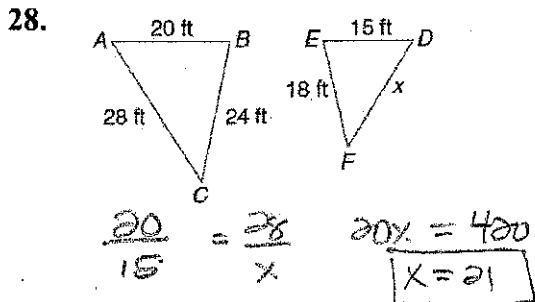
congruent ∠'s ✓
 proportionate sides ✓

$\cong \angle$'s ✓
 Proport. Sides ✓

27. A rectangle is 12 meters long and 21 meters wide. Which dimensions correspond to a nonsimilar rectangle?

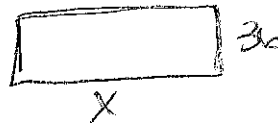
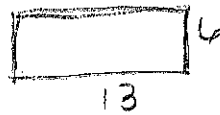
- A) 4 m; 7 m $\frac{12}{4} = \frac{21}{7}$ ✓ B) 8 m; 14 m $\frac{12}{8} = \frac{21}{14}$ ✓ C) 20 m; 35 m $\frac{12}{20} = \frac{21}{35}$ ✓ **(D) 24 m; 35 m**
 $\frac{3}{5} \neq \frac{7}{5}$

$\triangle ABC \sim \triangle DEF$ in each pair. Find the unknown lengths.



30. An architect is building a model of a tennis court for a new client. On the model, the court is 6 inches wide and 13 inches long. An official tennis court is 36 feet wide. What is the length of a tennis court?

$$X = 78 \text{ m}$$



$$\frac{6}{36} = \frac{13}{X}$$

$$6X = 468$$

Identify the scale factor.

31. Length of an alligator = 175 in, Toy Alligator = 7 in

$$.04$$

$$SF = \frac{I}{P}$$

32. Height of a house 39.2 ft, doll House 2.8 ft

$$\frac{1}{14}$$

33. On a scale drawing, a school is 1.6 feet tall. The scale factor is $\frac{1}{22}$. Find the height of the school.

$$\frac{1.6}{X} = \frac{1}{22}$$

$$X = 35.2 \text{ ft}$$

34. On a scale drawing, a bicycle is $6\frac{4}{5}$ inches tall. The scale factor is $\frac{1}{6}$. Find the height of the bicycle.

$$\frac{6.8}{X} = \frac{1}{6}$$

$$X = 40.8 \text{ in}$$

Decide whether the scale factor will produce an enlargement or a reduction

35. Scale Factor = $\frac{5}{2}$

E

36. Scale Factor = 1.4

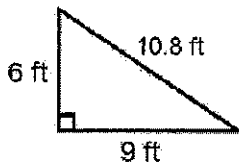
E

37. Scale Factor = 0.75

R

Find the perimeter and area of each polygon after the given dilation. Watch the units!!!

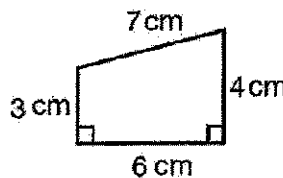
38. Scale Factor = $\frac{1}{2}$



$$P = 22.8 \text{ ft}$$

$$A = 27 \text{ ft}^2$$

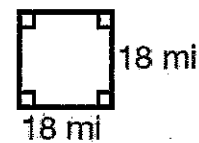
39. Scale Factor = 1.2



$$P = 20 \text{ cm}$$

$$A = 21 \text{ cm}^2$$

40. Scale Factor = 7



$$P = 72 \text{ mi}$$

$$A = 324 \text{ mi}^2$$

$$P = 11.4 \text{ ft}$$

$$P = 24 \text{ cm}$$

$$P = 504 \text{ mi}$$

$$A = 6.75 \text{ ft}^2$$

$$A = 30.24 \text{ cm}^2$$

$$A = 15876 \text{ mi}^2$$