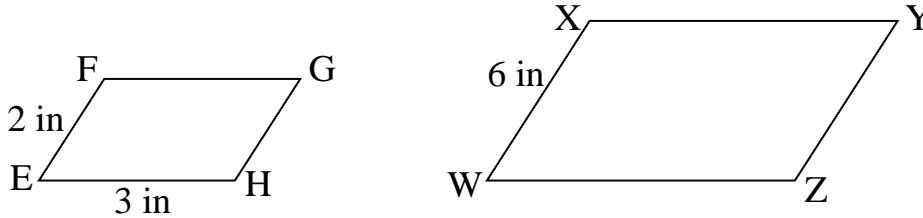


Worksheet on Similar Figures and Indirect Measurement with Multiple Choice

Show proportions for all problems.

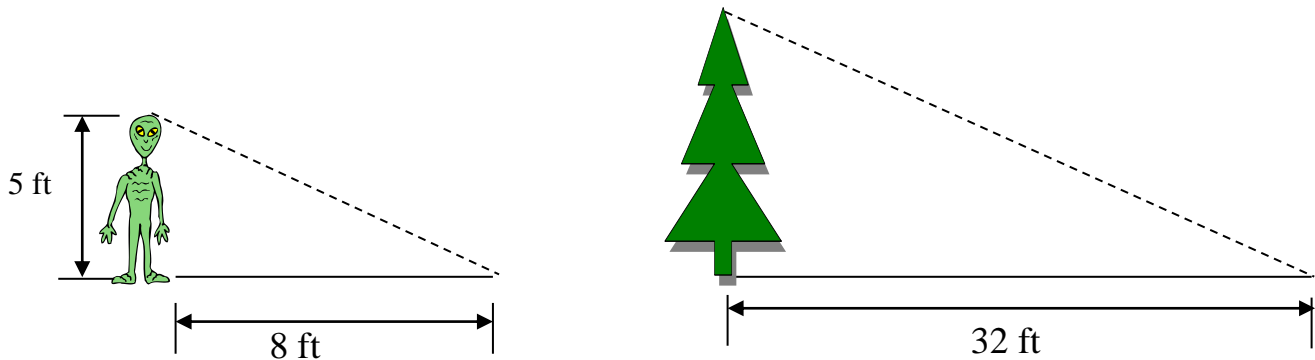
1. Parallelogram EFGH is similar to parallelogram WXYZ.



What is the length of \overline{WZ} ?

- a) 3 in b) 6 in c) 7 in d) 9 in

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



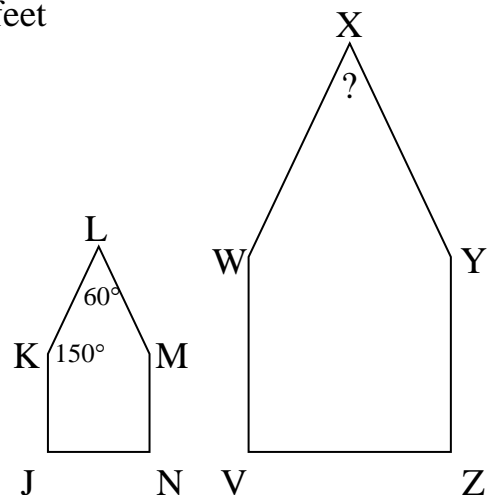
At the same time of day, a tree's shadow is 32 feet long. What is the height of the tree?

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

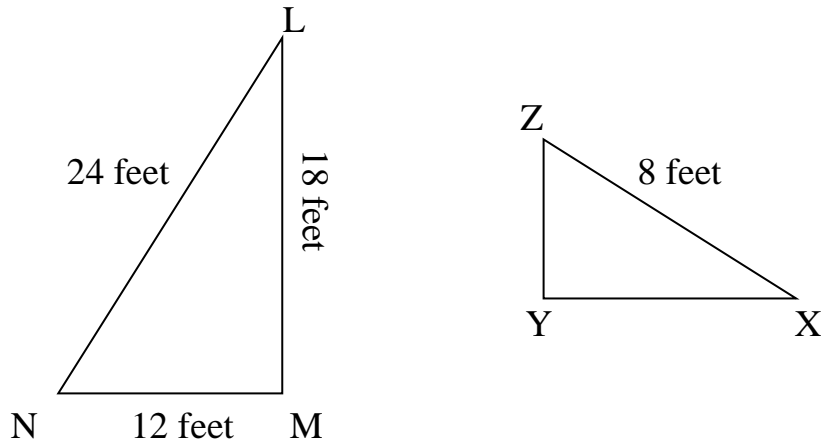
3. Pentagon JKLMN is similar to pentagon VWXYZ.

What is the measurement of angle X?

- a) 30° b) 60° c) 150° d) 120°



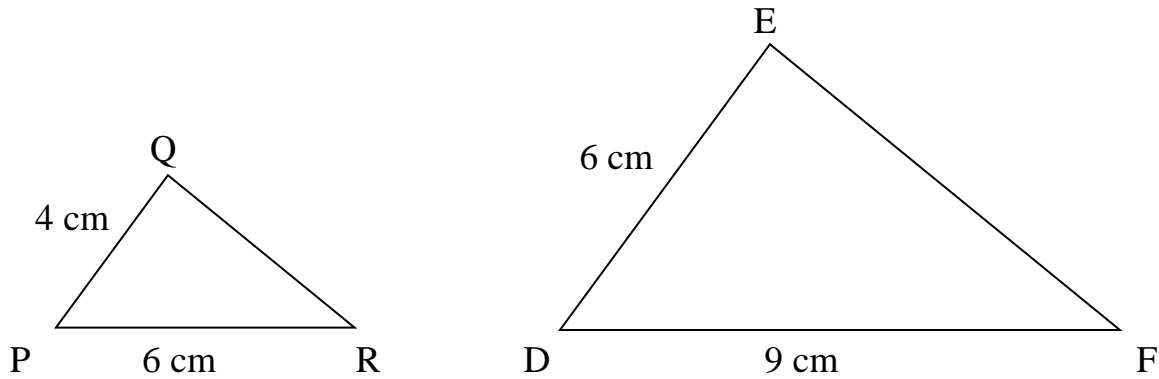
4. Triangle LMN is similar to triangle XYZ.



What is the length of \overline{YX} ?

- a) 2 feet b) 3 feet c) 4 feet d) 6 feet

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

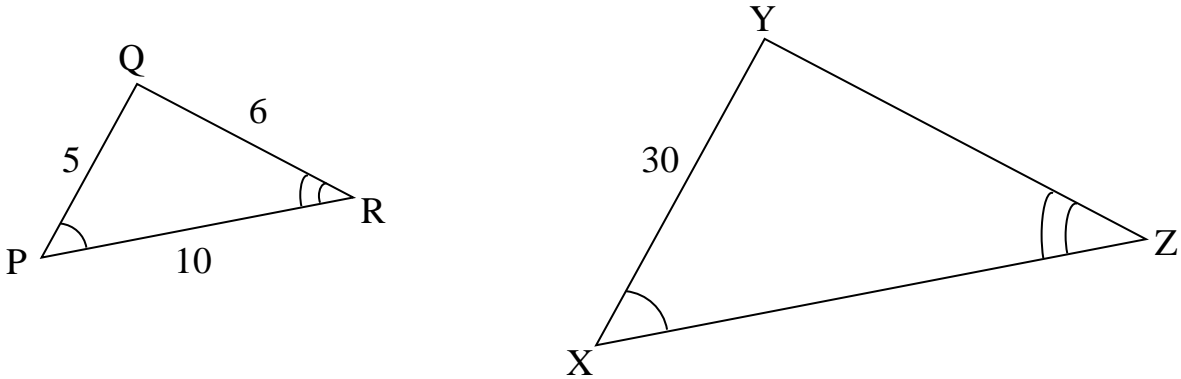


Which describes the relationship between the corresponding sides of the two triangles?

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

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

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



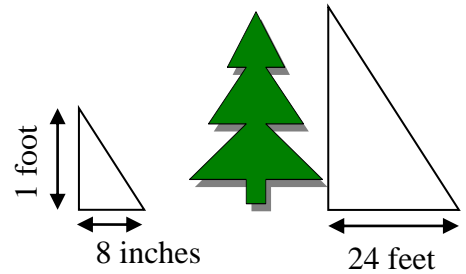
What is the perimeter of $\triangle XYZ$?

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

8. The shadow cast by a one-foot ruler is 8 inches long. At the same time, the shadow cast by a pine tree is 24 feet long.

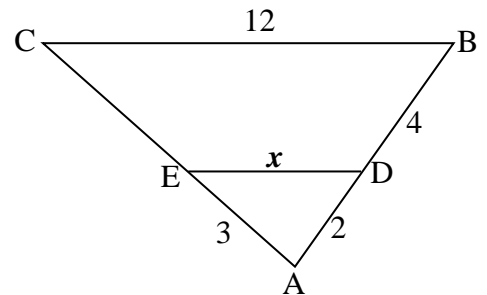
What is the height, in feet, of the pine tree?

- a) 3 feet b) 16 feet c) 36 feet d) 192 feet



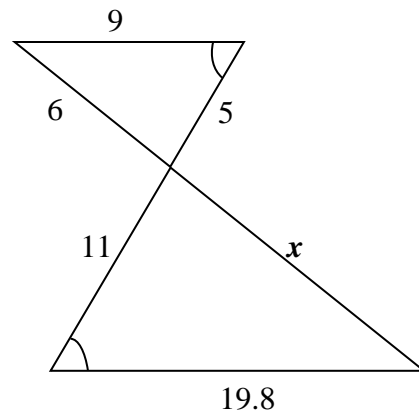
9. If triangles ADE and ABC shown in the figure to the right are similar, what is the value of x ?

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



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

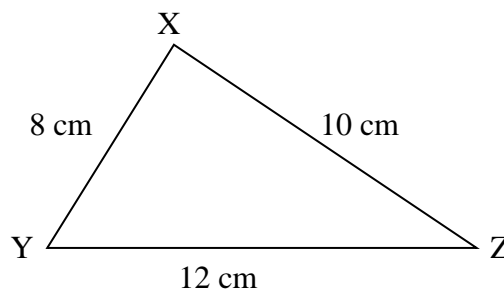
- a) 12.4 b) 13.2 c) 14 d) 18.6 e) 22.1



11. 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?

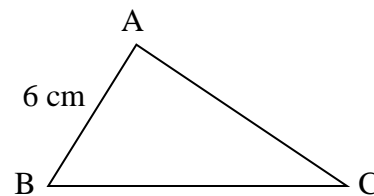
- a) 3 b) 6 c) 9 d) 30

12. $\triangle ABC$ is similar to $\triangle XYZ$.

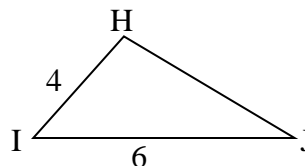


What is the length of segment \overline{BC} ?

- a) 5 cm b) 7.5 cm c) 8 cm d) 9 cm e) 10 cm

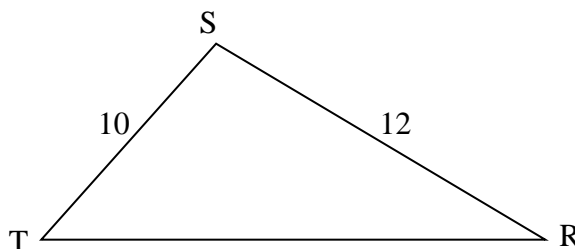


13. $\triangle HIJ$ is similar to $\triangle STR$.



What is the perimeter of $\triangle STR$?

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



14. Alanis is moving and needs to pack two mirrors. The largest mirror fits in a box that is 18 inches wide by 20 inches long. Her smaller mirror is similar in proportion to the larger mirror. Alanis determines that the width of the smaller box needs to be a minimum of 9 inches.

What should be the minimum length of the box to hold the smaller mirror?

- a) 2 inches b) 6 inches c) 9 inches d) 10 inches

15. 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°

16. 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
b) if both are obtuse triangles
c) if the triangles have the same area
d) if the triangles have the same perimeter