

## Flashcards: Similar Triangles

**Directions: Answer the following questions.**

1. Triangle HIJ is similar to triangle PQR. The measure of angle H equals 101 degrees and the measure of angle I equals 26 degrees. Find the measure of angle J and the measures of all three angles in triangle PQR.

2. Triangle FDR and triangle WKL are similar with the following measures. The measure of angle F equals 62 degrees. The measure of angle D equals 88 degrees. The measure of angle R equals 30 degrees. FD equals 12 inches. DR equals 21.19 inches. RF equals 23.99 inches. The measure of angle W equals 62 degrees. The measure of angle K equals 88 degrees. The measure of angle L equals  $2x$  minus 10 degrees. WK equals 21 inches. KL equals  $y$  inches. LW equals  $3z$  plus 3 inches.

Find the values of  $x$ ,  $y$  and  $z$ .

3. A 6 ft man stands next to a 100 ft tall building. The man's shadow is 8 ft long. How long is the building's shadow? How far from the building is the man standing?

4. A man stands next to a 120 ft tall building. The man's shadow is 5 ft long and is standing 120 ft from the building. How tall is the man?

Answers:

1. The measure of angle J equals  $180$  minus  $101$  minus  $26$  equals  $53$  degrees. The measure of angle P equals the measure of angle H equals  $101$  degrees. The measure of angle Q equals the measure of angle I equals  $26$  degrees. The measure of angle R equals the measure of angle J equals  $53$  degrees.

2. The measure of angle L equals the measure of angle R.  $2x$  minus  $10$  equals  $30$ .  $2x$  equals  $40$ .  $x$  equals  $20$ .

FD over WK equals DR over KL.  $12$  over  $21$  equals  $21.19$  over  $y$ .  $12y$  equals  $21$  times  $21.19$ .  $12y$  equals  $444.99$ .  $y$  equals  $37.08$ .

FD over WK equals RF over LW.  $12$  over  $21$  equals  $23.99$  over the quantity  $3z$  plus  $3$ .  $12$  times the quantity  $3z$  plus  $3$  equals  $21$  times  $23.99$ .  $36z$  plus  $36$  equals  $503.79$ .  $36z$  equals  $467.79$ .  $z$  equals  $12.99$ .

3. Building over man equals building shadow over man shadow.  $100$  over  $6$  equals  $x$  over  $8$ .  $800$  equals  $6x$ .  $133.33$  equals  $x$ . The building's shadow is  $133.33$  feet long.

4. Building's shadow equals  $120$  plus  $5$  equals  $125$  feet. Building over man equals building shadow over man shadow.  $120$  over  $x$  equals  $125$  over  $5$ .  $600$  equals  $125x$ .  $4.8$  equals  $x$ . The man is  $4.8$  feet tall.