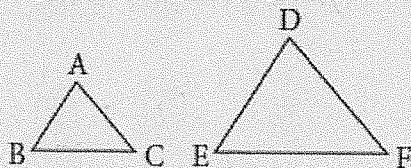


DAY 4 - Similar Triangles

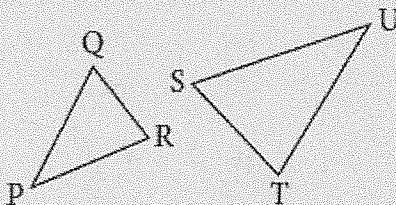
Write a proportionality statement for each pair of similar triangles

a) $\triangle ABC \sim \triangle DEF$



$$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$$

b) $\triangle PQR \sim \triangle UTS$

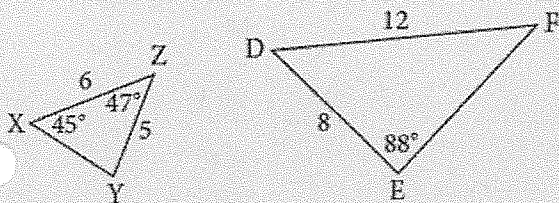


$$\frac{PQ}{UT} = \frac{QR}{TS} = \frac{PR}{US}$$

1/2

2. For each pair of similar triangles find the missing measures

a) $\triangle DEF \sim \triangle XYZ$



$$\frac{DE}{XY} = \frac{EF}{YZ} = \frac{DF}{XZ}$$

$$\frac{8}{XY} = \frac{EF}{5} = \frac{12}{6}$$

$$\frac{8}{XY} = \frac{12}{6}$$

$$48 = 12XY$$

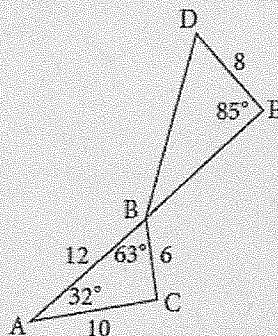
$$4 = XY$$

$$\frac{EF}{5} = \frac{12}{6}$$

$$6EF = 60$$

$$EF = 10$$

b) $\triangle ABC \sim \triangle BDE$



$$\frac{AB}{BD} = \frac{BC}{DE} = \frac{AC}{BE}$$

$$\frac{12}{BD} = \frac{6}{8} = \frac{10}{BE}$$

$$\frac{12}{BD} = \frac{6}{8}$$

$$96 = 6BD$$

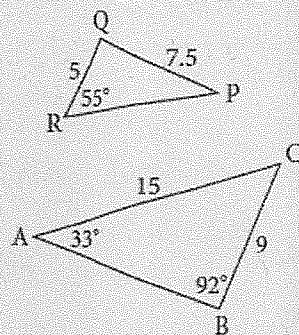
$$16 = BD$$

$$\frac{6}{8} = \frac{10}{BE}$$

$$60 = 8BE$$

$$BE = 7.5$$

c) $\triangle ABC \sim \triangle PQR$



$$\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$$

$$\frac{AB}{7.5} = \frac{9}{5} = \frac{15}{PR}$$

$$\frac{AB}{7.5} = \frac{9}{5}$$

$$5AB = 67.5$$

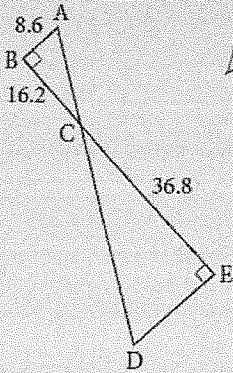
$$AB = 13.5$$

$$\frac{9}{5} = \frac{15}{PR}$$

$$9PR = 75$$

$$PR = 8.3$$

3. For each pair of similar triangles find the measure asked
 a) Find the length of side DE.



$\triangle ABC \sim \triangle DEC$

$$\frac{AB}{DE} = \frac{BC}{EC} = \frac{AC}{DC}$$

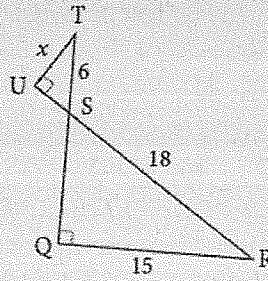
$$\frac{8.6}{DE} = \frac{16.2}{36.8} = \frac{AC}{DC}$$

$$316.48 = 16.2 DE$$

19.5 = DE

1/2

- b) Find the length of x.



$\triangle TUS \sim \triangle QRS$

$$\frac{UT}{QR} = \frac{TS}{RS} = \frac{US}{QS}$$

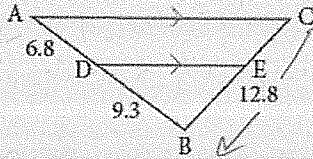
$$\frac{x}{15} = \frac{6}{18} = \frac{US}{QS}$$

$$18x = 90$$

x = 5

1/2

4. Given that DE is parallel to AC, AD = 6.8, DB = 9.3, and BC = 12.8, find the length of BE to the nearest tenth of a unit.



$\triangle BDE \sim \triangle BAC$

$$\frac{BD}{BA} = \frac{DE}{AC} = \frac{BE}{BC}$$

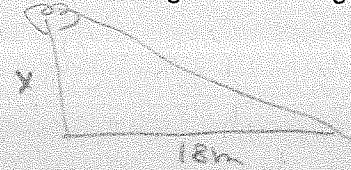
$$\frac{9.3}{16.1} = \frac{DE}{AC} = \frac{BE}{12.8}$$

$$119.04 = 16.1 BE$$

7.4 = BE

1/3

5. A person 1.9 m tall casts a shadow 3.8 m long. At the same time a tree casts a shadow 18 m long. Find the height of the tree.



Big : small

$$\frac{18}{3.8} = \frac{x}{1.9}$$

$$34.2 = 3.8x$$

$$9 = x$$

∴ tree is 9 m tall

1/2

6. In $\triangle VWX$, $WX = 28$ cm, $VX = 35$ cm, and $VW = 14$ cm. In $\triangle PQR$, $QR = 20$ cm, $PR = 25$ cm, and $PQ = 10$ cm. Are triangles VWX and PQR similar? How do you know?

$\triangle VWX \stackrel{?}{\sim} \triangle PQR$

$$\frac{VW}{PQ} \stackrel{?}{=} \frac{WX}{QR} \stackrel{?}{=} \frac{VX}{PR}$$

$$\frac{14}{10} \stackrel{?}{=} \frac{28}{20} \stackrel{?}{=} \frac{35}{25}$$

1.4 1.4 1.4

1/2

∴ yes they are similar

7. Given $\triangle DEF \sim \triangle RPQ$, $EF = 10$ in., $DF = 9$ in., $DE = 8$ in., and $RQ = 0.5$ ft. Find the length of side PQ .

$$\frac{DE}{RP} = \frac{EF}{PQ} = \frac{DF}{RQ}$$

$$\frac{8}{RP} = \frac{10}{PQ} = \frac{9}{0.5}$$

$$5 = 9PQ$$

0.55 = PQ

1/2

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