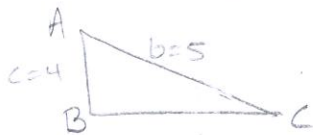


Solve each of the following triangles. (That means find the measure of each missing side and angle.)
You MUST draw a triangle for each problem and you MUST show the equation you are using to find each part. Round your answers to the nearest hundredth unless an angle is given in DMS format; if that is the case, write your answers for the angles in DMS format.

1. Triangle ABC -- given that angle B is the right angle, side b = 5, side c = 4.



$$4^2 + a^2 = 5^2$$

$$a^2 = 25 - 16$$

$$a^2 = 9$$

$$a = 3$$

$$\sin C = \frac{4}{5}$$

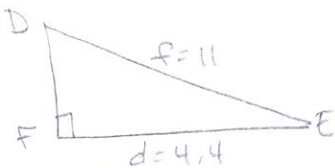
$$C = \sin^{-1} \frac{4}{5}$$

$$C = 53.13^\circ$$

$$A = 90^\circ - 53.13^\circ$$

$$A = 36.87^\circ$$

2. Triangle DEF -- given that angle F is the right angle, side d = 4.4, side f = 11



$$4.4^2 + e^2 = 11^2$$

$$e^2 = 121 - 19.36$$

$$e^2 = 101.64$$

$$e = 10.08$$

$$\cos E = \frac{4.4}{11}$$

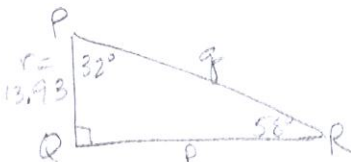
$$E = \cos^{-1} \frac{4.4}{11}$$

$$E = 66.42^\circ$$

$$90 - 66.42$$

$$D = 23.58^\circ$$

3. Triangle PQR -- given that angle P = 32°, angle Q = 90°, side r = 13.93



$$90^\circ - 32^\circ$$

$$R = 58^\circ$$

$$\sin 58^\circ = \frac{13.93}{q}$$

$$q = \frac{13.93}{\sin 58^\circ}$$

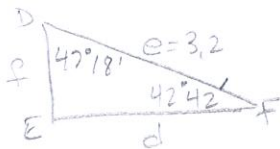
$$q = 16.43$$

$$\tan 58^\circ = \frac{13.93}{p}$$

$$p = \frac{13.93}{\tan 58^\circ}$$

$$p = 8.7$$

4. Triangle DEF -- given that side e = 3.2, angle E is the right angle, angle D = 47° 18'



$$F = 90^\circ - 47^\circ 18'$$

$$F = 42.7$$

(convert to DMS)

$$F = 42^\circ 42'$$

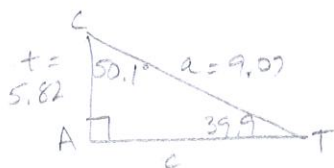
$$\sin 47^\circ 18' = \frac{d}{3.2}$$

$$d = 2.35$$

$$\cos 47^\circ 18' = \frac{f}{3.2}$$

$$f = 2.17$$

5. Triangle CAT -- given that angle A = 90°, side t = 5.82, angle C = 50.1°



$$90 - 50.1$$

$$T = 39.9^\circ$$

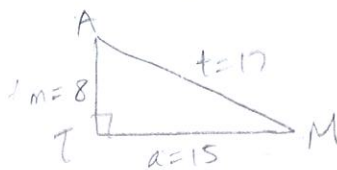
$$\sin 39.9^\circ = \frac{5.82}{a}$$

$$a = 9.07$$

$$\cos 39.9^\circ = \frac{c}{9.07}$$

$$c = 6.96$$

6. Triangle MAT -- given that side m = 8, a = 15, t = 17



$$\sin A = \frac{15}{17}$$

$$A = \sin^{-1} \frac{15}{17}$$

$$A = 61.93^\circ$$

$$90 - 61.93$$

$$\angle M = 28.07$$

$$\angle T = 90^\circ$$

ANSWERS:

1. Angle A = 36.87° Angle C = 53.13° side a = 3
 2. Angle D = 23.58° Angle E = 66.42° side e = 10.08
 3. Angle R = 58° side p = 8.70 side q = 16.43
 4. Angle F = 42° 42' side f = 2.17 side d = 2.35
 5. Angle T = 39.9° side a = 9.07 side c = 6.96
 6. Angle M = 28.07°, Angle A = 61.93°, Angle T = 90°