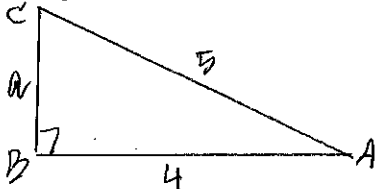


Solve each of the following triangles. (That means find the measure of each missing side and angle.)

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.



$$1) a^2 + 4^2 = 5^2 \quad 2) \cos A = \frac{4}{5}$$

$$a^2 = 9$$

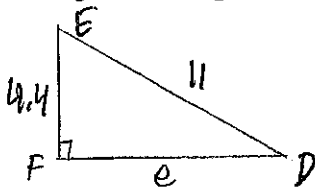
$$a = 3$$

$$A = 36.87^\circ$$

$$3) C = 90^\circ - 36.87^\circ$$

$$C = 53.13^\circ$$

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



$$1) e^2 + 4.4^2 = 11^2$$

$$e^2 = 101.64$$

$$e = 10.08$$

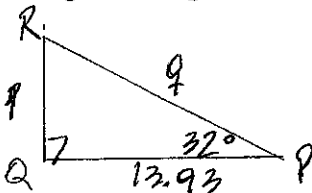
$$2) \sin D = \frac{4.4}{11}$$

$$D = 23.59^\circ$$

$$3) E = 90^\circ - 23.59^\circ$$

$$E = 66.42^\circ$$

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



$$1) R = 90^\circ - 32^\circ$$

$$R = 58^\circ$$

$$3) \tan 32^\circ = \frac{p}{13.93}$$

$$p = 13.93 \tan 32^\circ$$

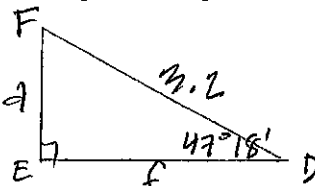
$$p = 8.7$$

$$3) q^2 = 8.7^2 + 13.93^2$$

$$q^2 = 269.7349$$

$$q = 16.42$$

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



$$1) F = 90^\circ - 47^\circ 18'$$

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

$$2) \sin 47^\circ 18' = \frac{d}{3.2}$$

$$d = 3.2 \sin 47^\circ 18'$$

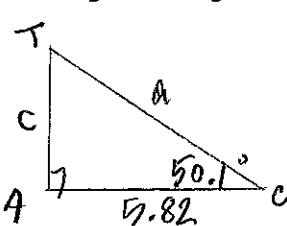
$$d = 2.35$$

$$3) \cos 47^\circ 18' = \frac{f}{3.2}$$

$$f = 3.2 \cos 47^\circ 18'$$

$$f = 2.17$$

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



$$1) T = 90^\circ - 50.1^\circ$$

$$T = 39.9^\circ$$

$$2) \tan 50.1^\circ = \frac{c}{5.82}$$

$$c = 5.82 \tan 50.1^\circ$$

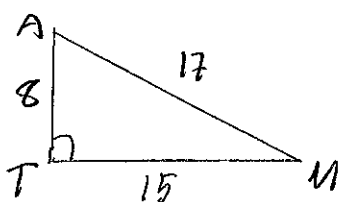
$$c = 6.96$$

$$3) \cos 50.1^\circ = \frac{5.82}{a}$$

$$a = \frac{5.82}{\cos 50.1^\circ}$$

$$a = 9.07$$

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



$$1) \sin M = \frac{8}{17}$$

$$M = \sin^{-1}\left(\frac{8}{17}\right)$$

$$M = 28.07^\circ$$

$$2) A = 90^\circ - 28.07^\circ$$

$$A = 61.93^\circ$$

$$3) T = 90^\circ$$

ANSWERS:

1. Angle A = 36.87^\circ Angle C = 53.13^\circ side a = 3

2. Angle D = 23.58^\circ Angle E = 66.42^\circ side e = 10.08

3. Angle R = 58^\circ side p = 8.70 side q = 16.43

4. Angle F = 42^\circ 42' side f = 2.17 side d = 2.35

5. Angle T = 39.9^\circ side a = 9.07 side c = 6.96

6. Angle M = 28.07^\circ, Angle A = 61.93^\circ, Angle T = 90^\circ