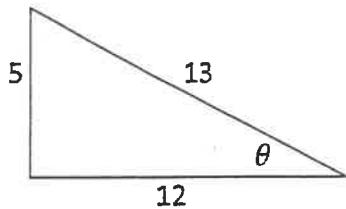


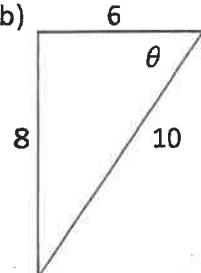
1. State the value of the designated trigonometric ratio in each right triangle: (1 mark each)

a)



$$\sin \theta = \frac{5}{13}$$

b)



$$\cos \theta = \frac{3}{5}$$

2. Use your calculator to determine each trigonometric ratio to 4 decimal places: (1 mark each)

$$\text{a) } \sin 28^\circ = 0.4695$$

$$\text{b) } \cos 62.8^\circ = 0.4571$$

3. Use your calculator to determine the value θ to the nearest tenth: (1 mark each)

$$\text{a) } \cos \theta = 0.7157$$

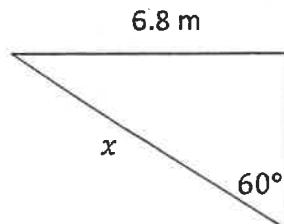
$$\text{b) } \sin \theta = \frac{3}{7}$$

$$\theta = 44.3^\circ$$

$$\theta = 25.4^\circ$$

4. Determine the designated side length or angle to the nearest tenth: (2 marks each – show all work)

a)

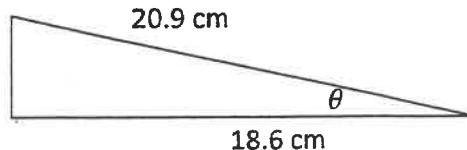


$$\sin 60^\circ = \frac{6.8}{x}$$

$$x = \frac{6.8}{\sin 60^\circ} = 7.851963661$$

$$7.9 \text{ m}$$

b)

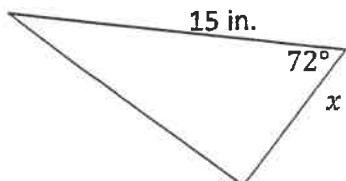


$$\cos \theta = \frac{18.6}{20.9}$$

$$\theta = \cos^{-1} \left(\frac{18.6}{20.9} \right) = 27.13236712$$

$$27.1^\circ$$

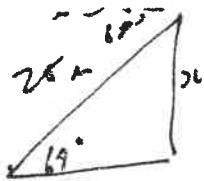
c)



$$\tan 72^\circ = \frac{x}{15}$$

$$16.15 \rightarrow 7.2 = \boxed{4.6 \text{ in.}}$$

5. A kite is flown such that all of the string, 25 m long, attached to the kite is being used. A ladybug clinging to the kite sees the person flying the kite on the ground at an angle of depression of 68° . How high above the ground is the kite? (show all work including a diagram, round to the nearest hundredth, 3 marks)



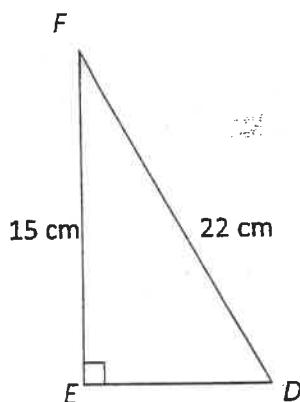
$$\sin 68^\circ = \frac{x}{25}$$

$$x = 25 \sin 68^\circ$$

$$= 23.12554636$$

23.18 m

6. Solve the triangle shown. Show work. Side lengths to 1 decimal place, angles to the nearest degree. (3 marks)



$$15^2 + f^2 = 22^2$$

$$225 + f^2 = 484$$

$$f^2 = 259$$

$$f = \sqrt{259}$$

$$= 16.09247644$$

$$f = \underline{16.1 \text{ cm}}$$

$$\angle D = \underline{43^\circ}$$

$$\sin D = \frac{15}{22}$$

$$\theta = \sin^{-1}(15/22)$$

$$= 42.98588608$$

$$\angle F = \underline{47^\circ}$$

$$\cos F = 15/22 \quad \angle F = 180 - 91 - 43$$

$$F = \cos^{-1}(15/22)$$

$$= 47.0141342$$

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