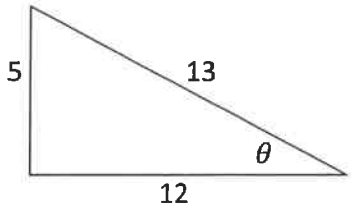
FMP 10 Quiz 3.1 - 3.3 /18 Name Key

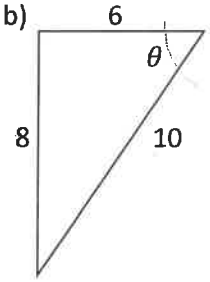
1. State the value of the designated trigonometric ratio in each right triangle: (1 mark each)

a)



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

b)



$\cos\theta = \frac{6}{10} = \frac{3}{5}$

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

a) $\sin 28° =$ 0.4695

b) $\cos 62.8° =$ 0.4571

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

a) $\cos\theta = 0.7157$

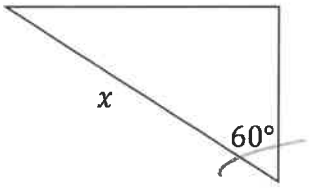
$\theta =$ 44.3°

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

$\theta =$ 25.4°

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

a)



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

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

$= 7.9$

7.9 m

b)

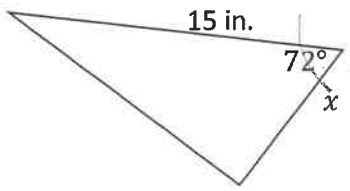
$\cos\theta = \frac{18.6}{20.9}$

$\angle\theta = \cos^{-1}(18.6 \div 20.9)$

$= 27.1$

27.1°

c)



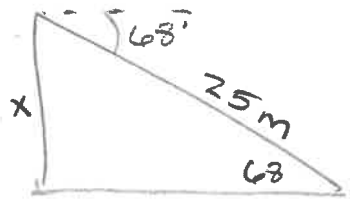
$\cos 72 = \frac{x}{15}$. 15

$46 = x$

4.6 in

OVER →

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)

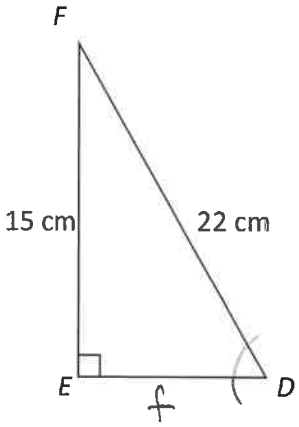


$\sin 68 = \frac{x}{25}$

$x = 23.18\text{m}$

23.18m

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



f

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

$225 + f^2 = 484$

$f^2 = 259$

$f = 16.1\text{cm}$

∠D

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

$\angle D = \sin^{-1}(15 \div 22)$

$= 43°$

∠F

$\cos F = \frac{15}{22}$

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

$= 47°$

$f = 16.1\text{cm}$

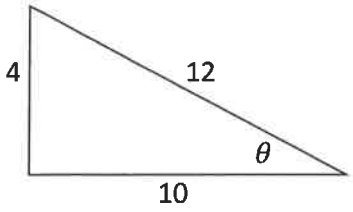
$\angle D = 43°$

$\angle F = 47°$

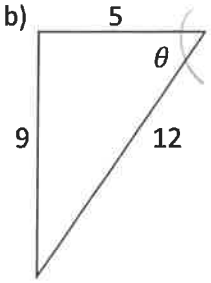
FMP 10 Quiz 3.1 - 3.3 /18 Name Key.

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

a)



b)



$\sin\theta = \frac{4}{12} = \frac{1}{3}$ $\cos\theta = \frac{5}{12}$

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

a) $\sin 38.3° =$ 0.6198 b) $\cos 78° =$ 0.2079

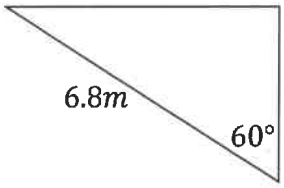
3. Use your calculator to determine the value θ to the nearest tenth: (1 mark each)

a) $\cos\theta = 0.3255$ b) $\sin\theta = \frac{3}{4}$

$\theta =$ 71.0° $\theta =$ 48.6°

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

a)

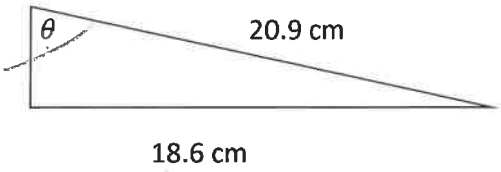


$6.8 \sin 60 = \frac{x}{6.8} \cdot 6.8$

$5.9 = x$

5.9m

b)

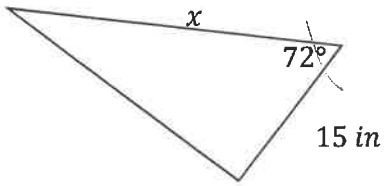


$\sin\theta = \frac{18.6}{20.9}$

$\angle\theta = \sin^{-1}(18.6 \div 20.9)$

$= 62.9$ 62.9°

c)



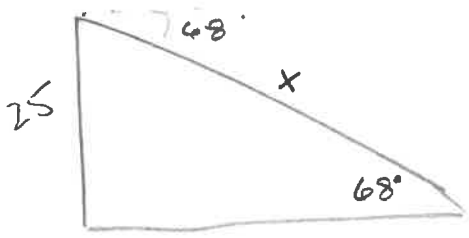
$\cos 72 = \frac{15}{x}$

$x = \frac{15}{\cos 72}$

$= 48.5$ 48.5 in

OVER →

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



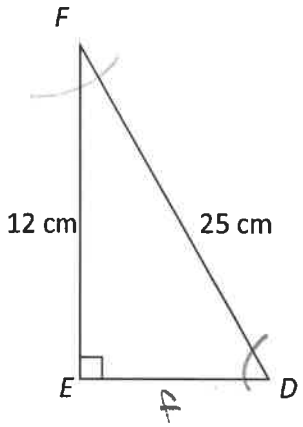
$$\sin 68 = \frac{25}{x}$$

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

$$= 26.96\text{m}$$

26.96m

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



f

$$12^2 + f^2 = 25^2$$

$$144 + f^2 = 625$$

$$f^2 = 481$$

$$f = 21.9$$

$f = 21.9\text{cm}$

∠D

$$\sin D = \frac{12}{25}$$

$$\angle D = \sin^{-1}(12 \div 25)$$

$$= 29°$$

$\angle D = 29°$

∠F

$$\cos F = \frac{12}{25}$$

$$\angle F = \cos^{-1}(12 \div 25)$$

$$= 61°$$

$\angle F = 61°$