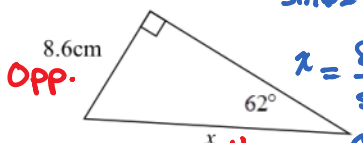
U2D5_Mid unit review

Monday, February 26, 2018 12:04 PM

U2D5_Mid unit review

MAP 4CI **Trig Mid Unit Review** Name: _____

1. Find the side "x" to the nearest tenth in each of the following triangles.

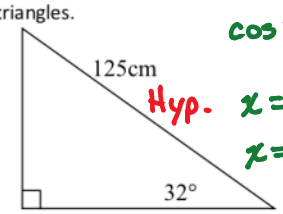


Opp. Hyp.

$\sin 62° = \frac{8.6}{x}$

$x = \frac{8.6}{\sin 62°}$

$x \doteq 9.7\text{ cm}$



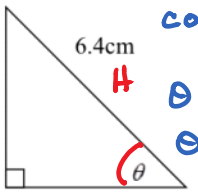
Hyp. Adj

$\cos 32° = \frac{x}{125}$

$x = 125\cos 32°$

$x = 106.0\text{ cm}$

2. Find the angle θ to the nearest degree for each of the following triangles.

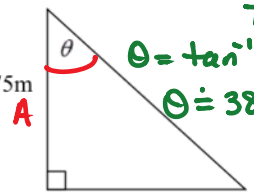


H A

$\cos\theta = \frac{4.5}{6.4}$

$\theta = \cos^{-1}(4.5 \div 6.4)$

$\theta \doteq 45°$



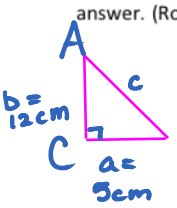
A O

$\tan\theta = \frac{58}{75}$

$\theta = \tan^{-1}(58 \div 75)$

$\theta \doteq 38°$

3. Solve ΔABC, a=5.0cm, b=12.0cm, angle $C = 90°$, Include a labeled diagram with your answer. (Round angles to the nearest degree and sides to nearest tenth).



$c^2 = 5^2 + 12^2$

$c^2 = 25 + 144$

$c^2 = 169$

$c = \sqrt{169}$

$C = 13.0$

To Find ∠B, Adj = 5, Opp = 12

$\tan B = \frac{12}{5}$

$B = \tan^{-1}(12 \div 5)$

$B \doteq 67°$

$\angle A = 90° - \angle B$

$\doteq 90° - 67°$

$\angle A = 23°$

4. The terminal arm of an angle, θ, in standard position passes through A(-1, 3).

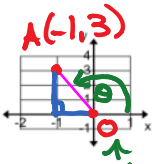
a) Determine the length of OA.

$r = \sqrt{x^2 + y^2}$

$r = \sqrt{(-1)^2 + 3^2}$

$r = \sqrt{1+9}$

$r = \sqrt{10}$



O is the "origin"

b) Determine the 3 primary trigonometric ratios to three decimal places.

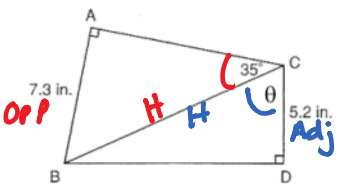
$\sin\theta = \frac{y}{r} = \frac{3}{\sqrt{10}} \doteq 0.949$

$\cos\theta = \frac{x}{r} = \frac{-1}{\sqrt{10}} \doteq -0.316$

$\tan\theta = \frac{y}{x} = \frac{3}{-1} = -3$

$\theta \doteq 108°$

5. Determine the measure of ∠BCD.



Opp H H Adj

$\sin 35° = \frac{7.3}{H}$

$H = \frac{7.3}{\sin 35°}$

$H \doteq 12.72716$

$\cos\theta = \frac{5.2}{H}$

$\theta = \cos^{-1}(5.2 \div 12.72716...)$

$\theta = \cos^{-1}(0.40857...)$

$\theta \doteq 66°$

6. For each trig. ratio below, determine whether the angle is obtuse, acute or could be either.

a) tanA = -1.6 obtuse

b) cosB = 0.9945 acute

c) sinC = 0.35 could be either

d) cosD = -0.7 obtuse

7. Determine all possible values for angle Z (Z is between 0 and 180°).

a) cosZ = -0.93 obtuse angle only

$Z = \cos^{-1}(-0.93)$

$Z \doteq 158°$

b) sinZ = 0.73 2 possible values.

$Z = \sin^{-1}(0.73)$ (OR) $Z = 180° - 47°$

$Z = 47°$ $Z = 133°$

Answers: 1.a) 9.7 cm b) 106.0 cm 2. a) θ = 45° b) 38° 3. a) c = 13, A = 23°, B = 67°
4. a) $\sqrt{10}$ b) sinθ = 0.949, cosθ = -0.316, tanθ = -3 5. h = 12.7 in., θ = 66°
6. a) obtuse b) acute c) could be either d) obtuse 7. a) 158° b) 47° or 133°