Lesson 2.0

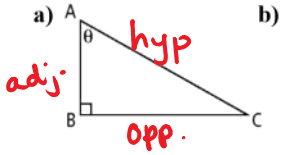
Saturday, February 4, 2017 4:34 PM

PREC 11 - Chapter 2 Note Book

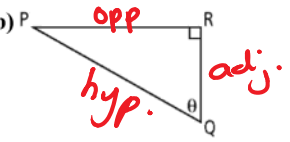
PREC 11 **2.0 Trigonometry & Angles Review**

1. Identify the hypotenuse, adjacent and opposite sides associated with angle θ in each triangle.

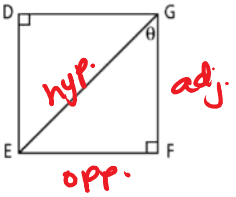
a)



b)



c)

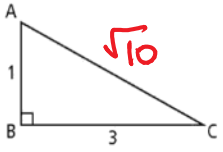


Remember the Trig Ratios!

SOH CAH TOA

2. Determine the value of each trigonometric ratio. Express the answer as a fraction. Then find the Angle.

a)



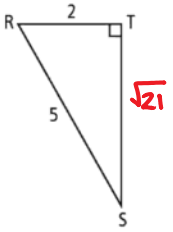
- tan A $= 3$

$A = 72°$

- cos C $= \frac{3}{\sqrt{10}}$

$C = 18°$

b)



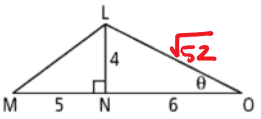
- cos R $= \frac{2}{5}$

$R = 66°$

- sin R $= \frac{\sqrt{21}}{5}$

$R = 66°$

c)



- sin ∠θ $= \frac{4}{\sqrt{52}}$

$\theta = 34°$

- tan ∠MLN $= \frac{5}{4}$

$\angle MLN = 51°$

3. Evaluate each trigonometric ratio, to four decimal places.

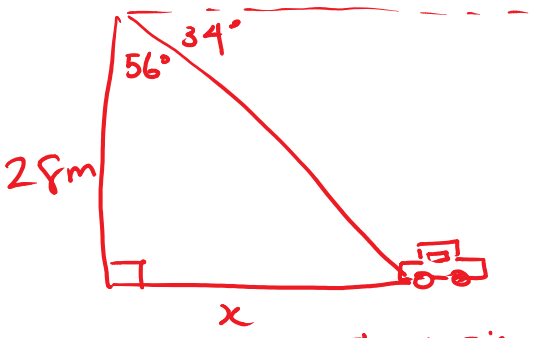
a) cos 89° **b)** tan 42° **c)** sin 45°

0.0175 0.9004 0.7071

4. Evaluate the trigonometric ratio cos 50°. Draw a diagram to explain what your answer represents.

$\cos 50° = 0.6428 = \frac{6428}{10000} = \frac{1607}{2500}$ (adj / hyp)

5. From the top of a building a surveyor determines the angle of depression of a parked car on the street below to be 34°. If the building is 28 m high calculate the distance from the base of the building to the parked car. Answer to the nearest metre.



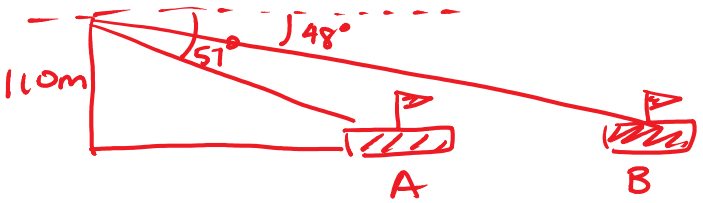
$\tan 56° = \frac{opp}{adj}$

$\tan 56° = \frac{x}{28}$

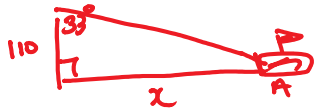
$x = 41.51$

The car is parked 42m away.

6. From the top of a cliff 110 m high an observer sees two boats, one directly behind the other, heading for shore. The angle of depression from the observer to the boat farther from the observer is 48° and the angle of depression to the nearer boat is 57°. Calculate the distance between the boats, to the nearest metre.



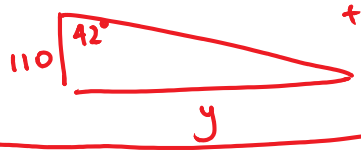
Boat A



$\tan 33° = \frac{x}{110}$

$71.44 = x$

Boat B



$\tan 42° = \frac{y}{110}$

$99.04 = y$

Distance between:

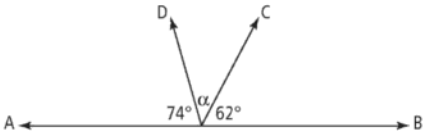
$99.04 - 71.44$

$= 27.6$

They are 28m apart.

7. For each diagram, determine the measure of the unknown angle.

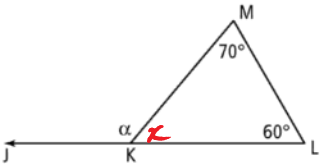
a)



$\alpha = 180 - 74 - 62$

$= 44°$

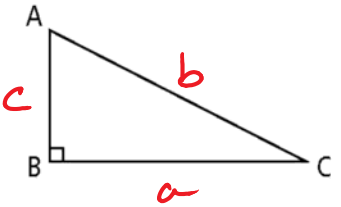
b)



$x = 180 - 70 - 60 = 50°$

$\alpha = 180 - 50 = 130°$

8. Use the diagram to help answer the questions.



Sides labelled with lower case letters.

a) Name the angle at vertex A in two different ways.

$\angle A$ or $\angle BAC$ or $\angle CAB$

b) What are two different ways to express the hypotenuse in $\triangle ABC$?

AC or b or CA

c) Express the Pythagorean relationship for $\triangle ABC$ in two ways.

$a^2 + c^2 = b^2$ or $(AB)^2 + (BC)^2 = (AC)^2$

d) What is an expression for sin A?

$\sin A = \frac{opp}{hyp}$

e) Write the equation for tan C.

$\tan C = \frac{opp}{adj}$

f) If $\cos C = \frac{a}{b}$, what is an expression for a?

$b \times \cos C = \frac{a}{b} \times b$ $\quad a = b\cos C$

Assignment: Trigonometry & Angles Worksheet