TRIGONOMETRY

calculate the:

calculate the:

SINE

LAW

COSINE

LAW

TRIG RATIOS

$$sinθ, cosθ, tanθ$$

TRIANGLE MEASUREMENT

**LABELLING TRIANGLES**

|  |  |
| --- | --- |
| To label any triangle, use:1. **CAPITAL** letters for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.2. Corresponding small letter for the \_\_\_\_\_\_\_\_\_\_\_opposite the corresponding \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . | Reference Angle is an acute angle used to label a right triangle. It can be represented by a **CAPITAL** letter or by a **SYMBOL** (A, θ, or β ). |

**THE THREE PRIMARY TRIG RATIOS**



1. Determine the following ratios for the given right triangle.

a. cos A b. tan C

2. Using your calculator, determine each trigonometric ratio to **FOUR decimal places**.

a. cos32o = b. tan 75o = c. sin 25o =

3. Determine the length of x in each triangle.

|  |  |
| --- | --- |
|  |  |

4. Solve the triangle. (Solve in this context means to find out every unknown: sides and angles.)





**Ex1**. A plane is coming down for a landing at YYZ. The angle of depression is 22o. The plane is 350 m from the ground. Determine the distance from the plane to the airport.



**Ex2.** A carpenter leans a ladder against a wall at an angle of 68o. The distance from the foot of the ladder to the wall is 36 inches. Draw a diagram with the given information.

a. How long is the ladder?
b. How high up is the ladder?

**DETERMINING ANGLES USING TRIG RATIOS**

1. Determine the measure of each angle to the nearest degree.

|  |  |  |  |
| --- | --- | --- | --- |
| a) sin A = 0.350 | b) cos M = 0.8721 | c) tan B = 3/4 | d) sin X = 1/2 |

2. Calculate the measure of $∠A$ to the nearest degree.

 

3. Solve the triangle. (ROUNDING: Angles nearest degree, Sides one decimal place)



4. Suppose a tree 50 feet in height casts a shadow of length 60 feet. What is the **angle of elevation** from the end of the shadow to the top of the tree with respect to the ground?