Survival Guide: Trigonometry

TRIGONOMETRY

Hypotenuse – _____

Angle of Focus – _____

Opposite Side – _____

Adjacent Side – _____

Angle of Elevation/Inclination – _____

Angle of Depression/Declination – _____

THINGS TO NOTE:

- the Pythagorean Theorem is _____

- the largest side of a triangle is across from the _____

- the smallest side of a triangle is across from the _____

- opposite sides and angles should be labelled with the _____

- angles are labelled with _____

- sides are labelled with _____

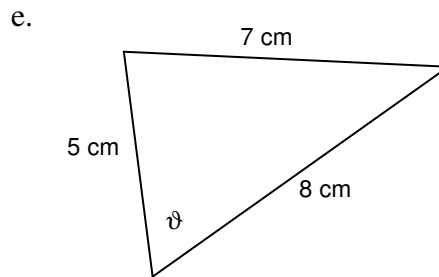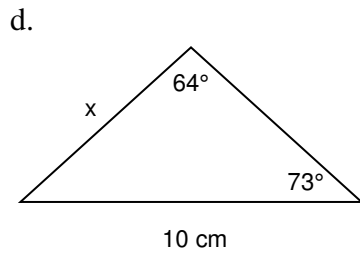The **PRIMARY TRIG RATIOS** are used to solve _____ triangles.

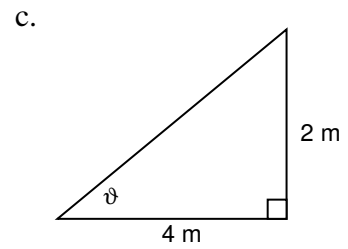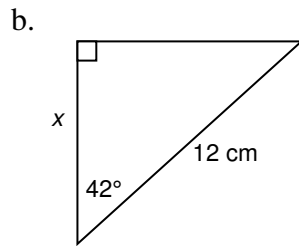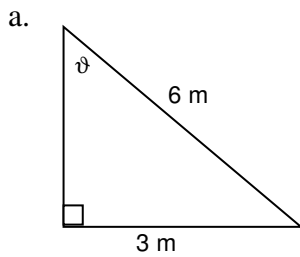The **SINE LAW** is used to solve _____ triangles when:

- _____ _____ are given

The **COSINE LAW** is used to solve _____ triangles when:

- _____ are given

- _____ are given

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SOLVE TRIANGLES.

a.

ϑ

6 m

3 m

b.

x

12 cm

42°

c.

2 m

ϑ
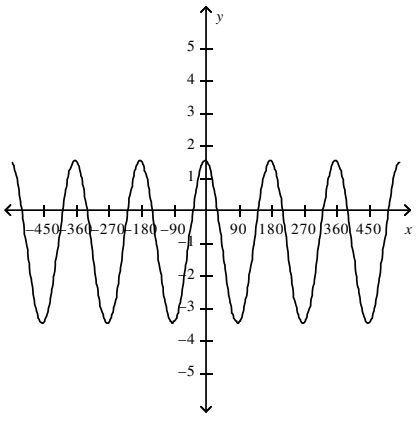
4 m

d.

64°

x

73°

10 cm

e.

7 cm

5 cm

8 cm

ϑ

WORD PROBLEM:
From a certain point, the angle of elevation of the top of a building is 8°. At a point 50 m closer to the building, the angle of elevation is 10°. Determine the height of the building.

SINUSOIDAL FUNCTIONS

_____ – a graph that has a repeating pattern

_____ – the highest point(s) on the graph

_____ – the lowest point(s) on the graph

_____ – a complete set of changes, starting from one point and returning to the same point in the same way

_____ – the length of one complete one cycle

          it is determined by
                p =

_____ – the horizontal line that is halfway between the max and min values

          it is determined by
                y =

_____ – the distance from the axis of the curve to either the max or min value;

          it is determined by
                a =

_____ – the graph of *f(x)* = sin*x*, where *x* is an angle measured in degrees

_____ – a periodic function created by transformations of *f(x)* = sin*x*

PROPERTIES FROM THE GRAPH:

	MAX = MIN = AXIS OR VERTICAL SHIFT= AMPLITUDE = PERIOD = PHASE SHIFT =	Values of a = k = d = c =
	Equation	

PROPERTIES FROM THE EQUATION:

$y = -2\sin(2(\theta + 90^\circ)) - 3$

TRANSFORMATIONS:

AXIS =

AMPLITUDE =

MAX =

MIN =

PERIOD =

FIRST POINT =

LAST POINT =

Graph

WORD PROBLEMS:

Sketch and find equations

    a. A boy on a Ferris wheel that turns at a constant rate of 1 revolution every 3 minutes is at most 23 metres above the ground and at least 2 metres above the ground.

    b. A buoy bobs up and down in the lake. The distance between the highest and lowest points is 3 m. It takes 6 seconds for the buoy to move from its highest point to its lowest point and back to its highest point. Suppose the depth (or equilibrium – which will be at the axis) of the water is 7m.