

## Math Stations

### Metric Prefixes

Write the name for each metric prefix shown below:

1.) mg = \_\_\_\_\_

2.) nm = \_\_\_\_\_

3.) km = \_\_\_\_\_

4.) dag = \_\_\_\_\_

5.)  $\mu\text{m}$  = \_\_\_\_\_

Fill in the appropriate scientific notation with each measurement

6.) 4.57 Gigameters = \_\_\_\_\_

7.) 3.98 centiseconds = \_\_\_\_\_

8.) 9.75 kilometers = \_\_\_\_\_

9.) 7.40 milliseconds = \_\_\_\_\_

10.) 5.2 Megagrams = \_\_\_\_\_

### Significant Figures

Determine the number of significant figures in the numbers given below.

1.) 0.0068 = \_\_\_\_\_

2.) 1.072 = \_\_\_\_\_

3.) 300.0 = \_\_\_\_\_

4.) 20.03 = \_\_\_\_\_

5.) 0.0030200 = \_\_\_\_\_

6.) 91010 = \_\_\_\_\_

7.)  $9.0 \times 10^{-3}$  = \_\_\_\_\_

8.) 780. = \_\_\_\_\_

9.) 918.010 = \_\_\_\_\_

10.) 8120 = \_\_\_\_\_

### Scientific Notation

Express the numbers below in correct scientific notation.

1.) 61,500 = \_\_\_\_\_

2.) 321 = \_\_\_\_\_

3.) 0.0000563 = \_\_\_\_\_

4.) 0.07085 = \_\_\_\_\_

5.) 0.0003009 = \_\_\_\_\_

Express the numbers below in correct standard notation

6.)  $1.09 \times 10^3$  = \_\_\_\_\_

7.)  $9.004 \times 10^{-2}$  = \_\_\_\_\_

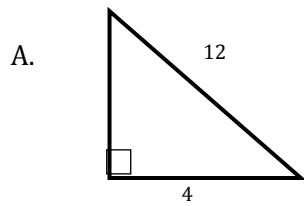
8.)  $3.078 \times 10^{-4}$  = \_\_\_\_\_

9.)  $4.22715 \times 10^8$  = \_\_\_\_\_

10.)  $5.60 \times 10^1$  = \_\_\_\_\_

## Trigonometry

For questions A and B, find the length of all sides for the triangles given below.



B.

C. The distance of a person from a tower is 100 m. They lifted their head and eyes from the ground to view the top of the tower through an angle of  $35^\circ$ . What is the height of the tower in meters?

## **Converting Coordinates**

**Convert the Rectangular Coordinates below to Polar Coordinates**

1.)  $(-3.00, 8.00)$

2.)  $(-2.00, -2.00)$

**Convert the Polar Coordinates to Rectangular Coordinates**

3.)  $(7.50, 150.0^\circ)$

## **Adding Vectors**

You are given the following vectors:

Vector A  $(3, 3)$

Vector B  $(1, -1)$

Vector C  $(3, 2)$

Sketch the Vector:  $A + 2B - C$  and its resultant

Calculate the resultant in rectangular coordinates

### **Adding by Components**

You are given the following vectors:

Vector A (3.00, 190.0°)

Vector B (4.00, 300.0°)

Sketch Vector A and Vector B in the smaller two graphs

Sketch the Vector:  $A + B$  and its resultant on the larger graph

Calculate the resultant in rectangular coordinates

## Numerical Answers Mathematical Toolkit Review Stations:

### Metric Prefixes

- 1) milligrams
- 2) nanometers
- 3) kilometers
- 4) dekagrams
- 5) micrometers
- 6)  $4.57 \times 10^9$  m
- 7)  $3.98 \times 10^{-2}$  s
- 8)  $9.75 \times 10^3$  m
- 9)  $7.40 \times 10^{-3}$  s
- 10)  $5.2 \times 10^6$  g

### Adding Vectors:

Resultant (2, -1)

### Adding by Components:

Vector A (3.00, 190°) = (-2.95, -0.521)

Vector B (4.00, 300.0°) = (2.00, -3.46)

Resultant of A + B = (-0.950, -3.98)

### Significant Figures

- 1) 2
- 2) 4
- 3) 4
- 4) 4
- 5) 5
- 6) 4
- 7) 2
- 8) 3
- 9) 6
- 10) 3

### Scientific Notation

- 1)  $6.15 \times 10^4$
- 2)  $3.21 \times 10^2$
- 3)  $5.63 \times 10^{-5}$
- 4)  $7.085 \times 10^{-2}$
- 5)  $3.009 \times 10^{-4}$
- 6) 1,090
- 7) 0.09004
- 8) 0.0003078
- 9) 422,715,000
- 10) 56.0

### Trigonometry

Triangle A: Side = 11.3

Triangle B: Opposite Side = 6.06

Hypotenuse = 16.2

Part C: Height = 70.0 m

### Converting Coordinates

1. (-3.00, 8.00) = (8.54, 111°)
2. (-2.00, -2.00) = (2.83, 225°)
3. (7.50, 150.0°) = (-6.50, 3.75)

