Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_ Hour:\_\_\_\_\_\_ Assignment #\_\_\_\_\_

**Position, Distance, and Displacement**

1. Read pages 328 to 330 and write a definition for each term below.

**Frame of reference -**

**Position –**

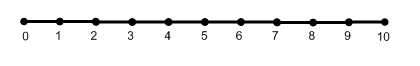
**Distance –**

**Displacement –**

**Vector -**

**Follow the instructions for each to gain a better understanding of the terms position, distance and displacement.**

2) Draw a circle on the number line below at position 0. Mark this circle with the letter “I” for the “Initial” position of the circle. Show the movement of your circle by drawing a vector 5.0 cm to the right and stop. Draw another circle where you stopped and mark this circle with the letter “F” for “Final” position of the circle.



A) What was the initial position of the circle?\_\_\_\_\_\_\_\_\_\_\_\_

B) What is the final position of the circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) What is the distance traveled by the circle? \_\_\_\_\_\_\_\_\_\_\_

D) What is the displacement of the circle?\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E) Of the three underlined quantities, which are numerically the same?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

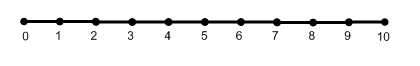
3) Draw a circle on the number line below at the position marked 0. Mark this circle with the letter “I” for the “Initial” position.

Show the movement of the circle in the manner outlined below:

Draw a vector 7.0 cm to the right, then

Draw a vector 2.0 cm to the left, then Stop.

Draw a circle where you stopped and mark this circle “F” for “Final” position.



A) What was the initial position of the circle?\_\_\_\_\_\_\_\_\_\_\_\_

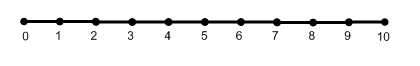
B) What is the final position of the circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) What is the distance traveled by the circle? \_\_\_\_\_\_\_\_\_\_\_

D) What is the displacement of the circle?\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E) Of the three underlined quantities, which are numerically the same?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) Draw a circle on the number line at the position marked 3. Mark this circle with the letter “I”. Draw a vector 5 cm to the right and stop. Draw another circle where you stopped and mark with the letter “F”.



A) What was the initial position of the circle?\_\_\_\_\_\_\_\_\_\_\_\_

B) What is the final position of the circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) What is the distance traveled by the circle? \_\_\_\_\_\_\_\_\_\_\_

D) What is the displacement of the circle?\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E) Of the three underlined quantities, which are numerically the same?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

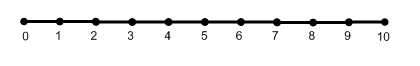
5) Draw a circle on the number line at the position marked 3. Mark this circle with the letter “I”.

Show the movement of the circle in the manner outlined below:

Draw a vector 7.0 cm to the right, then

Draw a vector 2.0 cm to the left, then Stop.

Draw a circle where you stopped and mark this circle “F” for “Final” position.



A) What was the initial position of the circle?\_\_\_\_\_\_\_\_\_\_\_\_

B) What is the final position of the circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) What is the distance traveled by the circle? \_\_\_\_\_\_\_\_\_\_\_

D) What is the displacement of the circle?\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E) Of the three underlined quantities, which are numerically the same?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) **Draw a diagram using vectors that show the following. Use a circle for the quarterback!**

At a football game, the quarterback receives the ball on the five yard line. The quarterback runs straight up the field for twenty-five yards, but then retreats straight back ten yards. The quarterback is then tackled. The announcer states that fifteen yards were gained on the play.

A) What was the initial position of the quarterback?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B) What is the final position of the quarterback? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) What is the distance traveled by the quarterback? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D) What is the displacement of the quarterback?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

