

NAME: _____ Score _____/10
Please **print** your name

Each blank is worth $\frac{1}{2}$ point

1. A **binary operation** is a calculation involving two operands.
2. A **binary relation** is a comparison of two operands.
3. The distance d between two points (x_1, y_1) and (x_2, y_2) is given by the

formula: $d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$.

4. The midpoint of the line segment joining two points (x_1, y_1) and (x_2, y_2) is given by the formula:

midpoint is $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

5. The point of intersection of the two number lines in the Cartesian coordinate system is called the **origin** of the coordinate system.
6. An **equation** is a mathematical statement which contains an = symbol.
7. A **conditional** equation is an equation which is true when some real numbers are substituted for the variables and is false when some real numbers are substituted for the variables.

Complete each of the following important properties of the Real Numbers.

Distributive Property: If a , b , and c are real numbers, then $a(b + c) = ab + ac$.

Transitive Property: If a , b , and c are real numbers such that $a = b$ and $b = c$, then $a = c$.

Law of Trichotomy: If a and b are real numbers, then one and only one of the following is true:

1. $a < b$
2. $a = b$
3. $a > b$

Zero Factor Property: If a and b are real numbers and $ab = 0$, then $a = 0$ or $b = 0$.