Manhattan Hunter Science H.S. Teacher:_____

NAME: _____ CLASS: _____

Geometry Lab 3

Finding Distance with Coordinates

1. Plot the following points on your graph paper: A(-3,-2), B(3,6)
2. Draw line segment AB.
3. Treating AB as the hypotenuse, construct a right triangle.
4. Call the third point of the right triangle point C.
5. Find the coordinates of C. C (___, ____)
6. Use the coordinates of A, B, and C to find the length of the legs of the right triangle

   AC and BC.
7. Use the Pythagorean Theorem to find the length of AB.
8. Let's call Point A's coordinates (x_1, y_1) point B's coordinates (x_2, y_2). Try to come up with a ***formula*** using (x_1, y_1) and (x_2, y_2) instead of the actual values, that will help you calculate the distance between point A & B.

d= _____

9. Use this formula to calculate the distance between the following two points (leaving your answer in *simplest radical form*): $P_1(-3,5), P_2(7,-2)$. d= _____.
10. Plot points 1 and 2 on a coordinates plane, draw a triangle and use the Pythagorean theorem to find the hypotenuse.
11. What can you conclude about the Pythagorean Theorem and the distance formula?

_____.