Name: _____

The Distance and Midpoint Formulas

1) 1) Find k so that the point (4, k) is $2\sqrt{2}$ units away from the point (2, 1).

   2) Find k so hat the point (k, 1) is $2\sqrt{2}$ units away from the point (0,−1).

   3) Find k so that the point (k, 1) is $\sqrt{17}$ units away from the point (2,−3).

   4) Find k so that the point (−1, k) is $\sqrt{13}$ units away from the point (−4,−3).

2) A circle has a diameter with endpoints $A(-5, -9)$ and $B(3, 5)$.

   1) Find the coordinates of the center of the circle.

   2) Find the length of the radius of the circle.

3) The coordinates of M are (2,-1) and the y-coordinate of N is 5. What is the x-coordinate of N if MN = $3\sqrt{5}$? (Two aswers are possible.)

4) A circle has a diameter with endpoints $A(2, -7)$ and $B(8, 1)$.

   1) Find the coordinates of the center of the circle.

   2) Find the length of the radius of the circle.

5) The vertices of a quadrilateral are A(0,-2),B(5,-2),C(8,2),D(3,2). Prove that the quadrilateral is a rhombus using the distance formula.