Name: _____

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Lakeside Academy MYP 3 - Worksheet # 203.1

Analytical Geometry: Change in x, Change in y, Distance and Midpoint

$$\textit{Change in } x: \ \Delta x = x_2 - x_1$$

$$\textit{Change in } y: \ \Delta y = y_2 - y_1$$

$$\textit{Distance Formula}: \ d(A,B) = \left| \sqrt{(\Delta x)^2 + (\Delta y)^2} \right|$$

$$\textit{Midpoint Formula}: \ \left(x_m = \frac{x_1 + x_2}{2}, \ y_m = \frac{y_1 + y_2}{2} \right)$$

Determine the change in x, the change in y, the distance, and the Midpoint of the following two coordinates. Show all your work in the space provided including the formula.

1)	$A(-3, 14)$ *and* $B(13, -2)$		
	$\Delta x = x_2 - x_1$ $\Delta y = y_2 - y_1$	$d(A,B) = \sqrt{(\Delta x)^2 + (\Delta y)^2}$	$\left(x_m = \frac{x_1 + x_2}{2}, \ y_m = \frac{y_1 + y_2}{2} \right)$
2)	$C(55,-16)$ *and* $D(67,-11)$		
	$\Delta x = x_2 - x_1$ $\Delta y = y_2 - y_1$	$d(C,D) = \sqrt{(\Delta x)^2 + (\Delta y)^2}$	$\left(x_m = \frac{x_1 + x_2}{2}, \ y_m = \frac{y_1 + y_2}{2} \right)$

3)	$E(9,\ 33)$ *and* $F(-6,\ 15)$		
	Change in x and y	*Distance*	*Midpoint*
4)	$G(19,\ 23)$ *and* $H(5,\ 17)$		
	Change in x and y	*Distance*	*Midpoint*
5)	$I(-5,\ 18)$ *and* $J(13,\ -2)$		
	Change in x and y	*Distance*	*Midpoint*

6)	$K(8, -2)$ *and* $L(14, 21)$		
	Change in x and y	*Distance*	*Midpoint*
7)	$N(-6, 14)$ *and* $P(13, -5)$		
	Change in x and y	*Distance*	*Midpoint*
8)	$Q(83, -19)$ *and* $R(44, -73)$		
	Change in x and y	*Distance*	*Midpoint*

9)	$S(12,\ 57)$ *and* $T(0, 52)$		
	Change in x and y	*Distance*	*Midpoint*
10)	$U(0,-12)$ *and* $V(-27,\ 0)$		
	Change in x and y	*Distance*	*Midpoint*
11)	$W(-45,\ 147)$ *and* $Z(99,\ -3)$		
	Change in x and y	*Distance*	*Midpoint*