Name, date, and period required to receive credit!

Name _____ Date _____ Period _____

Write the Equation of a Line When Given Two Points

Since two points determine a line, these two points can be used to write the equation of a line in both slope-intercept form and standard form. Follow these steps.

- Use the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$ to find the slope.
- Choose one point and substitute the values for x, y, and m into the equation $y = mx + b$.
- Solve for b.
- Substitute values for m and b into the slope-intercept form: $y = mx + b$. Then write the equation in standard form (if necessary): $Ax + By = C$, where A is a positive integer, B and C are integers, and A and B are not both equal to 0.

Directions: Find the equation of each line, then find the equation in the Answer Bank. Some equations are written in slope-intercept form, and others are written in standard form. After you find the equation in the Answer Bank, write its corresponding letter in the blank before the problem. Then write each letter above its problem number to complete the statement at the end of the activity.

1. _____ (1,–2), (4,–8)
2. _____ (–2,–12), (5,2)
3. _____ (2,–7), (–1,–10)
4. _____ (1,5), (–1,11)
5. _____ (5,6), (6,9)
6. _____ (0,0), (5,4)
7. _____ (2,1), (4,2)
8. _____ (3,2), (5,4)
9. _____ (0,–2), (4,0)
10. _____ (0,–3), (2,0)
11. _____ (–2,1), (2,2)
12. _____ (–3,4), (–3,2)
13. _____ (0,2), (5,2)

Answer Bank

U.	$y = \frac{1}{2}x$
S.	$y = 2$
Q.	$y = x - 1$
T.	$x - 4y = -6$
R.	$y = \frac{4}{5}x$
A.	$y = -2x$
F.	$y = 3x - 9$
D.	$x - 2y = 4$
O.	$y = 2x - 8$
N.	$3x - 2y = 6$
G.	$y = -3x + 8$
I.	$x = -3$
E.	$y = x - 9$

René Descartes (1596–1650) studied geometry by analyzing coordinates of points

___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
1	10	9	3	8	7	1	11	12	2	10	13	2	5	

___	___	___	___	___	___	___	.
5	12	4	7	6	3	13	