


Concept: Equation of a Straight Line

Name:

- You should have completed **Graphing – Section 8 Part A: Equation of a Straight Line** before beginning this handout.

PART B: COMPUTER COMPONENT

Instructions: In  follow the **Content Menu** path:

Graphing > Equation of a Straight Line

NOTE: Use the **Menu** button in order to get to the lesson where you left off.



Work through all Sub Lessons of the following Lessons **in order**:

- *Slope-Point Form of the Equation*
- *Special Cases*
- *Example to Summarize*
- *Word Problems/Applications*
- *Point of Intersection of Two Lines*
- *Match- Equation, Graph, Points, Words*

Additional Required Materials: *Graph Paper*



As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

NOTES

1. Slope-Point Form of the Equation

- Copy out the question and both solutions to Example 1.

Example 1: The Question:

<i>Solution 1</i>	<i>Solution 2</i>
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2. Example to Summarize

Question: Write the equation of a line, which passes through the point $(4, 5)$ and is perpendicular to the line $2x + 3y = 6$.

The Solution:

Step 1: Write the equation given to us in the form $y = \text{_____} + \text{_____}$.

Step 2: Sketch the line from *Step 1* (we called it l_1).

Step 3: Then, the slope of l_2 (which is perpendicular to l_1) is _____.

Step 4: There are two ways to approach this problem from this point on.
Provide your own copy of the two solutions below.

<i>Solution 1</i> [Slope-y-intercept]	<i>Solution 2</i> [Slope-point form]

Step 5: Sketch l_2 using the same axis used in Step 2.

3. Word Problems

►Record one of the problems, *from the computer exercises*, below. Then note and summarize the *Steps* involved.

Question:

The Solution:

Step 1:

4. Point of Intersection of Two Lines

►The point of intersection of two lines is also called the _____ of the system.

OFF COMPUTER EXERCISES (*Record your solutions in your notebook. Use grid paper when required to do so.*)

1. Write the equation of the line that,

(a) passes through the point (3,4) and has slope -3 .

Equation:

(b) passes through the point $(-1, -4)$ and has slope $\frac{1}{2}$.

Equation:

2. The baseball team went for ice cream after their game. Cones cost \$2 each and

sundaes cost \$3 each. Let x be the number of cones bought and y be the number of sundaes bought.

- (a) If the coach spent \$40 in total, write the equation that represents the above situation.

Equation:

- (b) *What are the different combinations of purchases of number of cones (x) and number of sundaes (y) that could occur?*

(Record all possible answers in the table below.)

x	
y	

- (c) Record the above information on a graph. Each point on the graph should represent another combination possibility.

NOTE: Do not join the points since only some points on the line represent possible combinations.

3. A car is expected to decrease in value according to the equation $y = -2000x + 40000$

- (a) Find the slope and interpret its meaning. _____
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- (b) Find the y-intercept and interpret its meaning. _____
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4. Graph the following lines on grid paper $x + y = 4$ and $2y = x - 1$.

What is the solution to this system?

NOTE: Be prepared to hand this package along with all detailed solutions, including completed graphs, in to your teacher.