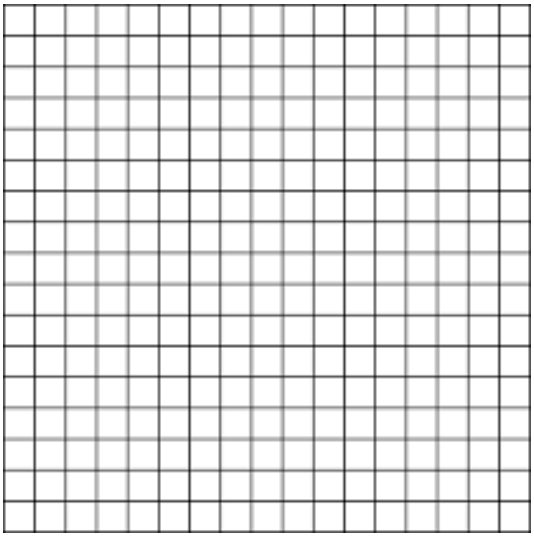
MPM 1D Handout
Graphing Linear Relations

Date: **Name:**

Important Stuff to Remember:

- To write the equation of a line, we need to know the **SLOPE** and the **Y-INTERCEPT**.
- We can find slope using the slope formula, $m = \frac{y_2 - y_1}{x_2 - x_1}$, if we are given two points on a line.
- If you are asked for standard form, you must find y = mx + b form first, then rearrange.
- Parallel lines have the same slope.
- Perpendicular lines have slopes that are negative reciprocals of each other.

1. A line has a slope of $-\frac{5}{4}$ and passes through the point (-2, 4). Write the equation of the line in slope y-intercept form, and then graph it.



2. A line has a slope of 5 and a y – intercept of -6.
   a. Write the equation for the line in slope y-intercept form.

   b. Use your equation to complete the ordered pair (-2, y).

   c. Use your equation to complete the ordered pair (x, 3).

3. A line passes through (-1, 5) and (2, 4).
    a. Determine the slope of the line.

    b. Write the equation for the line in slope y-intercept form.

    c. Write the equation of the line in standard form.

4. Write the equation of a line with a slope of – ¼ that passes through (-3, 7) in standard form.

5. Write the equation of a line that passes through (-5, 6) and has an x-intercept of 3 in slope y-intercept form.

6. Write the equation of a line that is parallel to $y = \frac{2}{3}x - 5$ and passes through (6, 4).

7. Write the equation of a line that is perpendicular to y = -3x + 7 and passes through (-2, 5).

8. Write the equation of a line that is parallel to $-2x + 4y - 5 = 0$ and has an x – intercept of -2.

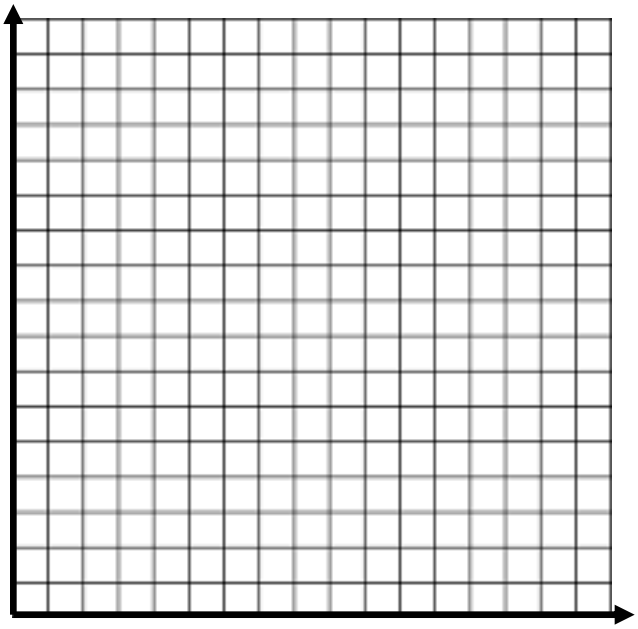
Preview of Tomorrow's Lesson:

Tools R Us rents snow blowers for a base fee of $20, plus $8/h. XYZ Rentals rents them for a base fee of $12, plus $10/h.

a) Write an equation that represents the cost of renting a snow blower from Tools R Us.

b) Write an equation that represents the cost of renting a snow blower from XYZ Rentals.

c) Graph both lines on the same set of axes. (Make sure that your y – axis counts to at least 60 – use increments of $5).



d) What do you think that the point of intersection of the lines means in this situation?

e) If you needed to rent a snow blower for 36 hours, which company would you choose and why?