No warm-up today!
Have your homework out, we will check answers, then it will be turned in :)
### Did You Hear About...

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE</td>
<td>FARMER</td>
<td>WHO</td>
<td>NAMED</td>
<td>HIS</td>
<td>PET</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
<tr>
<td>ROOSTER</td>
<td>ROBINSON</td>
<td>BECAUSE</td>
<td>IT</td>
<td>CREW</td>
<td>SO</td>
</tr>
</tbody>
</table>

### Answers for A–F:

- **A**: THE, (2, 0); (0, −6) COW
- **B**: FARMER, (2, 0); (0, 3)
- **C**: WHO, (4, 0); (0, −2)
- **D**: NAMED, (−3, 0); (0, 5)
- **E**: HIS, (4, 0); (0, −3) DECIDED
- **F**: PET, (2, 0); (0, −4)

### Find the x-intercept and the y-intercept of the graph of each equation below. Then find your answer in the answer column nearest the exercise and notice the word under it. Write this word in the box containing the letter of that exercise. Keep working and you will hear about a novel name.

<table>
<thead>
<tr>
<th><strong>A</strong></th>
<th><strong>B</strong></th>
<th><strong>C</strong></th>
<th><strong>D</strong></th>
<th><strong>E</strong></th>
<th><strong>F</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3x + 2y = 6</td>
<td>3x − 2y = 6</td>
<td>−5x + 3y = 15</td>
<td>5x + 3y = −15</td>
<td>x − 2y = 4</td>
<td>−2x + y = −4</td>
</tr>
<tr>
<td>(0, 3)</td>
<td>(2, 0)</td>
<td>(0, −3)</td>
<td>(2, 0)</td>
<td>(0, 0)</td>
<td>(2, 0)</td>
</tr>
</tbody>
</table>

### Answers for G–L:

- **G**: ROOSTER, (3, 0); (0, −4)
- **H**: ROBINSON, (−3, 0); (0, 5) CRACKED
- **I**: BECAUSE, (−6, 0); (0, −3) IT
- **J**: IT, (−3, 0); (0, 9/2)
- **K**: CREW, (5, 0); (0, −2)
- **L**: SO, (−6, 0); (0, −2) UP
What Did the Doctor Say After Examining Yunn Yunsberger?

Complete the table for each function. Find each ordered pair at the bottom of the page and write the corresponding letter above it. (Answers for Exercises 1–4 are to the left, and answers for Exercises 5–8 are to the right of the center line.)

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Equation</th>
<th>Table</th>
</tr>
</thead>
</table>
| 1        | \(y = -2x + 1\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        -1 & 3 \\
        -4 & 9 \\
        3 & -5 \\
      \end{array}\) |
| 2        | \(y = x - 5\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        7 & 2 \\
        1 & -4 \\
        -2 & -7 \\
      \end{array}\) |
| 3        | \(y = \frac{2}{3}x + 2\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        6 & 4 \\
        0 & 2 \\
        -3 & 0 \\
      \end{array}\) |
| 4        | \(y = -\frac{1}{4}x + 3\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        8 & 1 \\
        0 & 3 \\
        -8 & 5 \\
      \end{array}\) |
| 5        | \(y = 3x + 4\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        2 & 10 \\
        -1 & 1 \\
        -3 & -5 \\
      \end{array}\) |
| 6        | \(y = \frac{1}{2}x - 1\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        6 & 2 \\
        2 & 0 \\
        -4 & -3 \\
      \end{array}\) |
| 7        | \(y = -x + 6\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        -5 & -1 \\
        2 & -8 \\
        -8 & 2 \\
      \end{array}\) |
| 8        | \(y = \frac{3}{2}x - 4\) | \(\begin{array}{c|c}
        x & y \\
        \hline
        8 & 8 \\
        2 & -1 \\
        -4 & -10 \\
      \end{array}\) |
Agenda for Friday:
○ Check and hand in HW
○ No quiz!! (moved til next class)
○ Notes on 4.4 Slope
○ Foldable
○ Practice
○ Homework
Section 4.4

**Slope**

Slope: the ___________ of a line

\[ m = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} \]

\[ m = \frac{y_2 - y_1}{x_2 - x_1} \] where \((x_1, y_1)\) is the first point and \((x_2, y_2)\) is the second point

first point

second point
Ex 1  Find the slope between the two points.

a)  \((-3, 0)\) and \((-1, 6)\)

\[
m = \frac{y_2 - y_1}{x_2 - x_1}
\]

\[
m = \frac{6 - 0}{-1 - (-3)}
\]

\[
m = \frac{6}{-1 + 3}
\]

\[
m = \frac{6}{2}
\]

\[m = 3\]

b)  \((-1, -3)\) and \((5, -3)\)

\[
m = \frac{y_2 - y_1}{x_2 - x_1}
\]

\[
m = \frac{-3 - (-3)}{5 - (-1)}
\]

\[
m = \frac{-3 + 3}{5 + 1}
\]

\[
m = \frac{0}{6}
\]

\[m = 0\]
c) $(-2, 1)$ and $(1, -3)$

\[
m = \frac{(-3) - 1}{1 - (-2)}
\]

\[
m = \frac{-4}{1 + 2}
\]

\[
m = \frac{-4}{3}
\]

d) $(0, -1)$ and $(0, 4)$

\[
m = \frac{4 - (-1)}{0 - 0}
\]

\[
m = \frac{5}{0}
\]

$m = \text{undefined} \quad \text{(can't divide by zero!)}$
I can find **SLOPE (M)** from...

<table>
<thead>
<tr>
<th>Graph</th>
<th>Table</th>
<th>Ordered Pairs</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td><img src="image" alt="Table" /></td>
<td>(2, -3) (5, -6)</td>
<td>( y = -2x + 5 )</td>
</tr>
</tbody>
</table>

**Specialty Slopes:**

Fold here

Cut the dotted lines
**SLOPE (M)**

**RATIO – Division!**

<table>
<thead>
<tr>
<th>x</th>
<th>f(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>-2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

**f(x)** also mean y pick 2 consecutive coordinates in your table these will be your \((x_1,y_1)\) \((x_2,y_2)\)

**Check your slope!**

Positive Slope

Negative Slope

**SLOPE (M)**

\[(4, 8) \{5, 10\}\]

\[(x_1,y_1) \{x_2,y_2\}\]

\[
m = \frac{10-5}{5-4} = \frac{5}{1} = 5
\]

**SLOPE (M)**

Remember, y goes **first** (on top)!

This is **opposite** of graphing ordered pairs, where you go \(x\) first \((x,y)\). Always rise over run or y over \(x\)!

**SLOPE (M)**

Slope-Intercept Form

\[y = mx + b\]

Equation of a Line!

**Ex:** Find the slope of the line that passes through the points \((2,-3)\) \((5,-6)\)

\[
m = \frac{-6 - (-3)}{5 - 2} = \frac{-3}{3} = -1
\]

**Ex:** Find the slope:

\[
y = x + 3 \quad m = 1/4
\]

\[
y = x \quad m = 1
\]

\[
y = x + 3 \quad m = 1/4
\]

\[
y = x \quad m = 1
\]
HOY - VUX
H - horizontal line
O - zero slope
Y - equation of line is $y = \#$

V - vertical line
U - undefined slope
X - equation of line is $x = \#$

**Specialty Slopes:**
- Zero slope
- Horizontal line
- Undefined slope
- Vertical line
Time to practice!
1) What Might You Have If You Don't Feel Well?
2) What Do You Call A Duck That Steals?

Show all your work on a separate sheet of paper.

This is being collected!
Homework:
Those 2 riddle sheets - anything you didn't get done in class will be homework ;)

If you got done, hang on to your work, I'll collect it when I'm back on Tuesday!