Clickers

Graphing, PowerPoint Lecture 13
Interpreting Graphs Lecture 14
Graphing Lines Lecture 15

Worksheet

Quiz on Inequalities

Homework
Topics: 14 and 15
\[-2 \leq x \leq 5\]

\[(-2, 5]\]
\[5 \geq \chi\]

\[\chi \leq 5\]

\[(-\infty, 5]\]
Solve for $x$:

\[-2 \leq 7 + 2x < 8\]

\[-7 \quad -7 \quad -7\]

\[\frac{-9}{2} \leq \frac{2x}{2} < \frac{1}{2}\]

\[-4.5 \leq x < .5\]

\([-4.5, .5)\]
\[ 7 - x \leq 15 \]

\[
\frac{-7}{-7} = -7
\]

\[-x \leq 8\]

\[ x \geq -8 \]

\[ [-8, \infty) \]
Pop Bell charges .20 per call and .11 for each minute over 3 minutes. Find an equation for the cost of making a phone call. How many minutes were you on the phone if the cost was more than $2.50?

\[ C = 0.11(m-3) + 0.20 \]

\[ C = 0.11m - 0.33 + 0.20 \]

\[ C > 2.50 \]

\[ 0.11m - 0.13 > 2.50 \]

\[ 0.11m > 2.63 \]

\[ m > 23.9 \] minutes
Pop Bell charges $.20 per call and .11 for each minute over 3 minutes. Find an equation for the cost of making a phone call. How many minutes were you on the phone if the cost was between $3.00 and $4.50?

\[ C = .11m - .13 \]

\[ 3.00 < C < 4.50 \]

\[ 3.00 < .11m - .13 < 4.50 \]

\[ 
\begin{align*}
&\frac{.13}{.13} + \frac{.13}{.13} \\
&3.13 < .11m < 4.63 \\
&\frac{.11}{.11} \frac{.11}{.11} \frac{.11}{.11} \\
&26.45 \text{ minutes} < M < 42.09 \text{ minutes}
\end{align*}
\]
Solve for $x$: $-2x < -8$

1. $x \leq 4$
2. $x < 4$
3. $x \geq 4$
4. $x > 4$

$(-4, \infty)$
1. $X \leq 4$
2. $X < 4$
3. $X > 4$
4. $X \geq 4$
1. $X \leq 4$

2. $X < 4$

3. $X > 4$

4. $X \geq 4$
1. $(4, \infty)$
2. $(\infty, 4)$
3. $(4, -\infty)$
4. $(-\infty, 4)$
Graphing Points
Points on a plane are located by using ordered pairs.
The first coordinate corresponds to the x value; the
second coordinate corresponds to the y value.
Move the mouse in the quadrant to see the signs of the ordered pairs!

(+,+)

X axis

Y axis
Graphing Points
Points on a plane are located by using ordered pairs. The first coordinate corresponds to the x value; the second coordinate corresponds to the y value.

Move the mouse in the quadrant to see the signs of the ordered pairs!

(−, +)

X axis

Y axis
Graphing Points
Points on a plane are located by using ordered pairs. The first coordinate corresponds to the x value; the second coordinate corresponds to the y value.

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Graphing Points
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Graphing Points

We locate points on a plane by using ordered pairs. The first coordinate corresponds to the x value; the second coordinate corresponds to the y value.
ordered pair

READ

(-1, 2) \rightarrow interval
A phone company charges 15 cents a minute plus 80 cents for the call. What is the equation that relates cost and minutes? Plot some points. Graph the equation.

Cost \quad Y = .15 X + .80
A phone company charges 15 cents a minute plus 80 cents for the call. What is the equation that relates cost and minutes? Plot some points. Graph the equation.

\[ Y = 0.15X + 0.80 \]

<table>
<thead>
<tr>
<th>X</th>
<th>Y = 0.15X + 0.80</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.80</td>
</tr>
<tr>
<td>5</td>
<td>0.15(5) + 0.80 = 1.55</td>
</tr>
<tr>
<td>10</td>
<td>0.15(10) + 0.80 = 2.30</td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.15(20) + 0.80 = 3.80</td>
</tr>
</tbody>
</table>

Points:
- (0, 0.80)
- (5, 1.55)
- (10, 2.30)
- (20, 3.80)
minutes

dependent

independent

(0, 0.8)
(5, 1.55)
(10, 2.3)
(20, 3.8)
A phone company charges 15 cents a minute plus 80 cents for the call. What is the equation that relates cost and minutes? Plot some points. Graph the equation.

\[ Y = 0.15X + 0.80 \]
Sally has a lawn mowing business. She bought a lawn mower for $200 and she charges $5 an hour. What is the equation that relates profit and hours worked? Plot this equation using intercepts.
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\[
\text{Cost } \ C = 5 \ h - 200
\]

<table>
<thead>
<tr>
<th>C</th>
<th>c=5h-200</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5(0)-200 = -200</td>
</tr>
<tr>
<td>40</td>
<td>5(40)-200 = 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>h</th>
<th>C</th>
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<td>0</td>
<td>-200</td>
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<td>40</td>
<td>0</td>
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Fixed cost

Y-intercept

X-intercept

\[ P = 5h - 200 \]
Sally has a lawn mowing business. She bought a lawn mower for $200 and she charges $5 an hour. What is the equation that relates profit and hours worked? Plot this equation using intercepts.

\[ C = 5h - 200 \]
\[-8 \cdot x > 16\]

\[
\frac{-8}{-8} - \frac{16}{-8}
\]

\[x < -2\]

\((-\infty, -2)\)

\[\overbrace{-2}^{\text{not included}}\]
7x - 12 \geq 3(2x - 1)

\[7x - 12 \geq 6x - 3\]

\[-6x\]

\[x - 12 \geq -3\]

\[+12\]

\[x \geq 9\]

\([9, \infty)\]
\[-6 \leq 5x + 4 \leq 29\]
\[-4 \leq 5x \leq 25\]
\[-\frac{4}{5} \leq x \leq \frac{25}{5}\]
\[-2 \leq x \leq 5\]

\((-2, 5)\)
-2x > 8
\[ 5x + 7 \leq 2(x + 6) \]
-1 < 2x + 3 < 7
• Given a graph, determine zeros of a graph
• Given a graph, determine the critical regions of a graph
• Graph a line by plotting two points
The graph shows the temperature during a day in Chicago. What was the temperature at noon?
The graph shows the temperature during a day in Chicago. What was the temperature at noon?
The graph shows the temperature during a day in Chicago. When was the temperature 0°?
The graph shows the temperature during a day in Chicago.
What was the **high** temperature for the day?
When was the **high** temperature?
The graph shows the temperature during a day in Chicago. What was the **low** temperature for the day? When was the **low** temperature?
The graph shows the temperature during a day in Chicago. When was the temperature rising?
The graphs below show the profit for two companies, PA and HL. How many calculators does HL have to sell to break even? How many does PA have to sell to break even?
A repair shop charges 30 plus $15 per hour.

Write the equation that relates cost and hours.
A repair shop charges $30 plus $15 per hour.

\[ C = 15h + 30 \]

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>0</td>
<td>15(0) + 30 = 30</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td>3</td>
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<td>5</td>
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</table>
$C = 15h + 30$
$y = 3x - 4$
Graph by plotting points:  \(6x - 4y = 18\)
Graph by plotting points: \[ 6x - 4y = 18 \]
Graph by plotting points: \[ y = \frac{-1}{2} x + 5 \]
Graph by plotting points: $6x + 5y = 35$
Graph using intercepts

$3x + 2y = 6$