Mat 011 Agenda  Day 13: 2/20/02

- Attendance
- Review of Inequalities
- Interpreting Graphs, S105  PowerPoint Lecture14
- Quiz # 4 on Inequalities

Homework: Topic 14, page S109
\[ \frac{-2x}{-2} \geq \frac{8}{-2} \]

\[ x \leq -4 \]

\[ (-\infty, -4) \]

\[ -2x > 8 \]

\[ -2(-10) ? \]

\[ 20 > 8 \text{ Yes} \]
\[5x + 7 \leq 2(x + 6)\]
\[5x + 7 \leq 2x + 12\]
\[-7 \quad -7\]
\[5x \leq 2x + 5\]
\[-2x \quad -2x\]
\[3x = 5\]
\[x = \frac{5}{3}\]
\[x = 1.67\]
$$-1 < 2x + 3 < 7$$

$$-3 \leq 2x \leq 4$$

$$-\frac{3}{2} \leq x \leq 2$$

$$-2 < x \leq 2$$

$$(-2, 2)$$
• 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. When was the temperature $0^\circ$?
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 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?
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**?

![Graph showing profit for PA and HL](image)
A repair shop charges $30 plus $15 per hour.

Write the equation that relates cost and hours.

Let \( h \) = \# hours

\[
C = 15h + 30
\]

\[
0 = 15h + 30
\]

\[
-30 = 15h
\]

\[
-2 = h
\]
A repair shop charges 30 plus $15 per hour.

\[ C = 15h + 30 \]

<table>
<thead>
<tr>
<th>h</th>
<th>C = 15h + 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>C = 15(0) + 30 = 30</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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<td>5</td>
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</tbody>
</table>
$C = 15h + 30$
$y = 3x - 4$

$3(0) - 4 = 0 - 4 = -4$

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-4</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
$y = 3x - 4$

$O = (0, -4)$

$(2, 2)$

$(0.33, 0)$

$(0, 4)$

$x = 1.33$

$0 = 3x - 4$

$4 = 3x$

$x = \frac{4}{3}$
$y = 3x - 4$

Points:
- $(0, -4)$
- $(3, 5)$
$y = 3x - 4$

($0, -4$)

($3, 5$)
Graph by plotting points: \[6x - 4y = 18\]
$6x - 4y = 18$

Points:
- $(0, -4.5)$
- $(3, 0)$
Graph by plotting points: \[ y = \frac{-1}{2} x + 5 \]
Graph by plotting points: \[ y = \frac{-1}{2} x + 5 \]
Graph by plotting points: \[ y = \frac{-1}{2} x + 5 \]

Points:
- (2, 4)
- (0, 5)
Graph by plotting points: \[ 6x + 5y = 35 \]
Graph by plotting points: \[ 6x + 5y = 35 \]
Graph by plotting points: \[ 6x + 5y = 35 \]

Points: (0, 7) and (5, 1)