I. $x$- and $y$-intercepts of a line...

...to find these two points...

Let $x = 0$ in the equation, solve for $y = b$, then let $y = 0$ in the equation, solve for $x = a$.

\[
\begin{array}{c|c}
  x & y \\
  \hline
  0 & b \\
  a & 0 \\
\end{array}
\]

II. Slope of a line (p.138): quantitative measure of how steep a line is tilted, usually denoted “m”

For any two points on a line, $P_1(x_1,y_1)$ & $P_2(x_2,y_2)$...

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

“rise” (vertical change) over the “run” (horizontal change)
III. Equation Forms of a Line:

1. \( y = mx + b \)  
   slope-intercept form

2. \( Ax + By = C \)  
   standard form

IV. Examples (pp.151-152): Exercises #4,16,22,26,30

V. Two Anomalous Lines (p.145):

<table>
<thead>
<tr>
<th>Type of Line</th>
<th>Equation Form</th>
<th>( x )- and ( y )-Intercepts</th>
<th>Slope of line</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Horizontal</td>
<td>( y = b )</td>
<td>none &amp; (0,b)</td>
<td>( m = 0 )</td>
</tr>
<tr>
<td>2. Vertical</td>
<td>( x = a )</td>
<td>(a,0) &amp; none</td>
<td>( m ) is undefined</td>
</tr>
</tbody>
</table>

VI. Examples (p.152): Exercises #52,60
VII. Application Example (p.153): Exercise #80

HW: pp.151-153 / Exercises #7,11,15,19, 21-61(every other odd),77,81
Read pp.136-150 (section 2.4)