2.1: Real Numbers

- Order numbers from least to greatest:

Ex: \( 0.5, -\frac{1}{2}, 1, 0, \frac{5}{2} \)  
Ex: \( \frac{3}{2}, -0.25, -\frac{1}{5}, 2, 0 \)  
Ex: \( -\frac{1}{5}, 6, -0.25, \sqrt{3} \)

\(-\frac{1}{2}, 0, 0.5, 1, \frac{5}{2} \)  
\(-0.25, -\frac{1}{5}, 0, \frac{3}{2}, 2 \)  
\(-0.25, -\frac{1}{5}, \sqrt{3}, 6 \)

- Find opposites of numbers:

Ex: Find: \(-a \) if \( a = -7 \)  
Ex: Find: \(-y \) if \( y = 3.6 \)

\(-a = 7 \)  
\(-y = -3.6 \)

- Find absolute value of numbers and perform operations with absolute value:

Ex: \(|-1.3| \)  
Ex: \(|5| \)  
Ex: \(12 - |-4| \)

1.3  
5  
12 - 4 = 8

Ex: \(|7 - 20| + 5 \)  
Ex: \(|-3 + 1| \)  
Ex: \(|4 - 6 + 3| \)

\(|-13| + 5 \)  
\(|-2| \)  
\(|1| \)

\(13 + 5 \)  
2  
1

- Classify numbers using “whole,” “integer,” and “rational” and “irrational”:

<table>
<thead>
<tr>
<th></th>
<th>Rational</th>
<th>Irrational</th>
<th>Integer</th>
<th>Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>0.6</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>175</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>-(\frac{26}{4})</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>0.6(\overline{1})</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>(\sqrt{18})</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
2.5: Apply the Distributive Property
- Be able to use the distributive property and identify and combine like terms

Ex: \((p - 3)(-8)\)  
\[-8p + 24\]

Ex: \(3m + 5 - 10\)  
\[3m + 15 - 10\]

Ex: \(6r + 2(r + 4)\)  
\[6r + 2r + 8\]

Ex: \(4 - 2(x - 3) - 3x\)  
\[4 + -2x + 6 - 3x\]

- Be able to simplify division problems using the distributive property

Ex: \(\frac{6x - 14}{2}\)  
\[3x - 7\]

Ex: \(\frac{9z - 6}{-3}\)  
\[-3z + 2\]

Ex: \(\frac{-24a - 10}{-8}\)  
\[3a + \frac{5}{4}\]

2.7: Find Square Roots and Compare Real Numbers

Ex: \(x^2 = 49\)  
\(x = \pm 7\)

Ex: \(\pm \sqrt{100}\)  
\(\pm 10\)

Ex: \(-\sqrt{3600}\)  
\(-60\)

Ex: Estimate \(\sqrt{101}\) between 2 integers
10 and 11

Ex: Estimate \(-\sqrt{72}\) between 2 integers
-9 and -8