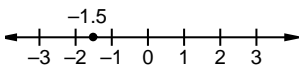
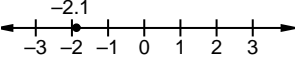
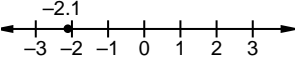
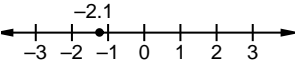
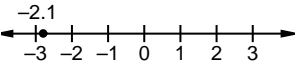


## Chapter 10 Review

Objective [10.1a] Tell which integers correspond to a real-world situation.		
Brief Procedure	Example	Practice Exercise
<p>Determine whether a negative integer or a positive integer corresponds to the given situation.</p>	<p>Tell which integers correspond to this situation: A student has \$106 in his checking account. The student owes \$248 on his credit card.</p> <p>The integer 106 corresponds to having \$106 in a checking account . The integer <math>-248</math> corresponds to a \$248 credit card debt.</p>	<p>1. Tell which integer corresponds to this situation: A business lost \$1200 during a 30-day period.</p> <p>A. <math>-36,000</math> B. <math>-1200</math> C. <math>1200</math> D. <math>36,000</math></p>
Objective [10.1b] Graph rational numbers on a number line.		
Brief Procedure	Example	Practice Exercise
<p>Find and mark the point on the number line that corresponds to the given number.</p>	<p>Graph <math>-1.5</math>.</p> <p>The graph of <math>-1.5</math> is halfway between <math>-2</math> and <math>-1</math>.</p> <div style="text-align: center;">  </div>	<p>2. Graph <math>-2.1</math>.</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>
Objective [10.1c] Convert from fractional notation for a rational number to decimal notation.		
Brief Procedure	Example	Practice Exercise
<p>Disregard the sign of the number and carry out the division indicated by the resulting fraction. Then express the result as a positive or negative number, depending on the sign of the original fraction.</p>	<p>Find decimal notation for <math>-\frac{7}{4}</math>.</p> <p>We first find decimal notation for <math>\frac{7}{4}</math>.</p> <p>Since <math>\frac{7}{4}</math> means <math>7 \div 4</math>, we divide.</p> <div style="text-align: center;"> <math display="block">\begin{array}{r} 1.75 \\ 4 \overline{) 7.00} \\ \underline{4} \phantom{00} \\ 30 \phantom{0} \\ \underline{28} \phantom{0} \\ 20 \\ \underline{20} \\ 0 \end{array}</math> </div> <p>Thus, <math>\frac{7}{4} = 1.75</math>, so <math>-\frac{7}{4} = -1.75</math>.</p>	<p>3. Find decimal notation for <math>-\frac{1}{8}</math>.</p> <p>A. <math>-0.125</math> B. <math>-0.18</math> C. <math>-0.25</math> D. <math>-0.81</math></p>

Objective [10.1d] Determine which of two real numbers is greater and indicate which, using $<$ or $>$ .		
Brief Procedure	Example	Practice Exercise
Consider the relative position of the two numbers on the number line. The one to the left is less than the one to the right.	Use $<$ or $>$ for $\square$ to write a true sentence: $-7 \square -10$ Since $-7$ is to the right of $-10$ on the number line, we have $-7 > -10$ .	4. Use $<$ or $>$ for $\square$ to write a true sentence: $-8 \square 1$ A. $<$ B. $>$
Objective [10.1e] Find the absolute value of a real number.		
Brief Procedure	Example	Practice Exercise
If the number is negative, make it positive. If the number is positive or zero, leave it alone.	Find $ -4.3 $ . The number is negative, so we make it positive. $ -4.3  = 4.3$	5. Find $ 59 $ . A. $-59$ B. $0$ C. $59$
Objective [10.2a] Add real numbers without using a number line.		
Brief Procedure	Example	Practice Exercise
1. <i>Positive numbers</i> : Add the same as arithmetic numbers. The answer is positive. 2. <i>Negative numbers</i> : Add absolute values. The answer is negative. 3. <i>A positive and a negative number</i> : Subtract the smaller absolute value from the larger. Then: a) If the positive number has the greater absolute value, the answer is positive. b) If the negative number has the greater absolute value, the answer is negative. c) If the numbers have the same absolute value, the answer is 0. 4. <i>One number is zero</i> : The sum is the other number.	Add without using a number line: $-15 + 9$ . We have a negative and a positive number. The absolute values are 15 and 9. The difference is 6. The negative number has the larger absolute value, so the answer is negative. $-15 + 9 = -6$	6. Add without using a number line: $-1.2 + (-3.4)$ . A. 4.6 B. 2.2 C. $-2.2$ D. $-4.6$

Objective [10.2b] Find the opposite, or additive inverse, of a real number.		
Brief Procedure	Example	Practice Exercise
<p>The opposite, or additive inverse, of any real number <math>a</math> is the number <math>-a</math> such that <math>a + (-a) = (-a) + a = 0</math>. To find the opposite of a number, we change its sign.</p>	<p>Find the opposite of <math>\frac{5}{3}</math>.</p> <p>The opposite of <math>\frac{5}{3}</math> is <math>-\frac{5}{3}</math> because <math>\frac{5}{3} + \left(-\frac{5}{3}\right) = 0</math>.</p>	<p>7. Find the opposite of <math>-20</math>.</p> <p>A. <math>-20</math> B. <math>0</math> C. <math>20</math></p>
Objective [10.3a] Subtract real numbers and simplify combinations of additions and subtractions.		
Brief Procedure	Example	Practice Exercises
<p>For any real numbers <math>a</math> and <math>b</math>,</p> $a - b = a + (-b).$ <p>(To subtract, add the opposite, or additive inverse, of the number being subtracted.)</p>	<p>Subtract: <math>6 - (-7)</math>.</p> <p>The opposite of <math>-7</math> is <math>7</math>. We change the subtraction to addition and add the opposite.</p> $6 - (-7) = 6 + 7 = 13$	<p>8. Subtract: <math>2 - 12</math>.</p> <p>A. <math>-14</math> B. <math>-10</math> C. <math>10</math> D. <math>14</math></p>
<p>When several additions and subtractions occur together, rewrite the subtractions as additions and then carry out the calculation.</p>	<p>Simplify: <math>5 - (-1) - 3 + 7</math>.</p> $5 - (-1) - 3 + 7 = 5 + 1 + (-3) + 7 = 10$	<p>9. Simplify: <math>-8 - 4 + 12 - (-9)</math>.</p> <p>A. <math>-33</math> B. <math>-15</math> C. <math>9</math> D. <math>25</math></p>
Objective [10.4a] Multiply real numbers.		
Brief Procedure	Example	Practice Exercise
<p>a) Multiply the absolute values.</p> <p>b) If the signs are the same, the answer is positive.</p> <p>c) If the signs are different, the answer is negative.</p>	<p>Multiply: <math>-2.4(3)</math>.</p> <p>The signs are different, so the answer is negative.</p> $-2.4(3) = -7.2$	<p>10. Multiply: <math>-7(-9)</math>.</p> <p>A. <math>-63</math> B. <math>-16</math> C. <math>2</math> D. <math>63</math></p>
Objective [10.5a] Divide integers.		
Brief Procedure	Example	Practice Exercise
<p>a) Divide the absolute values.</p> <p>b) If the signs are the same, the answer is positive.</p> <p>c) If the signs are different, the answer is negative.</p>	<p>Multiply: <math>-36 \div (-4)</math>.</p> <p>The signs are the same, so the answer is positive.</p> $-36 \div (-4) = 9$	<p>11. Divide: <math>\frac{56}{-8}</math>.</p> <p>A. <math>-9</math> B. <math>-7</math> C. <math>7</math> D. <math>9</math></p>

Objective [10.5b] Find the reciprocal of a real number.		
Brief Procedure	Example	Practice Exercise
<p>Two numbers whose product is 1 are called reciprocals of each other.</p> <p>For <math>a \neq 0</math>, the reciprocal of <math>a</math> can be named <math>\frac{1}{a}</math> and the reciprocal of <math>\frac{1}{a}</math> is <math>a</math>.</p> <p>The reciprocal of a nonzero number <math>\frac{a}{b}</math> can be named <math>\frac{b}{a}</math>.</p> <p>The number 0 has no reciprocal.</p>	<p>Find the reciprocal of <math>-\frac{4}{5}</math>.</p> <p>The reciprocal of <math>-\frac{4}{5}</math> is <math>-\frac{5}{4}</math>, because <math>-\frac{4}{5} \left( -\frac{5}{4} \right) = 1</math>.</p>	<p>12. Find the reciprocal of 2.</p> <p>A. <math>-2</math></p> <p>B. <math>-\frac{1}{2}</math></p> <p>C. <math>\frac{1}{2}</math></p> <p>D. 2</p>
Objective [10.5c] Divide real numbers.		
Brief Procedure	Example	Practice Exercise
<p>For any real numbers <math>a</math> and <math>b</math>, <math>b \neq 0</math>,</p> $a \div b = \frac{a}{b} = a \cdot \frac{1}{b}.$ <p>(To divide, we can multiply by the reciprocal of the divisor.)</p>	<p>Divide: <math>-\frac{1}{3} \div \frac{2}{7}</math>.</p> $-\frac{1}{3} \div \frac{2}{7} = -\frac{1}{3} \cdot \frac{7}{2} = -\frac{7}{6}$	<p>13. Divide: <math>-\frac{3}{4} \div \left( -\frac{5}{11} \right)</math>.</p> <p>A. <math>-\frac{53}{44}</math></p> <p>B. <math>-\frac{13}{44}</math></p> <p>C. <math>\frac{15}{44}</math></p> <p>D. <math>\frac{33}{20}</math></p>
Objective [10.5d] Simplify expressions using rules for order of operations.		
Brief Procedure	Example	Practice Exercise
<ol style="list-style-type: none"> <li>Do all calculations within parentheses before operations outside.</li> <li>Evaluate all exponential expressions.</li> <li>Do all multiplications and divisions in order from left to right.</li> <li>Do all additions and subtractions in order from left to right.</li> </ol>	<p>Simplify: <math>3^2 + 24 \div 2 - (4 + 2 \cdot 8)</math></p> $\begin{aligned} & 3^2 + 24 \div 2 - (4 + 2 \cdot 8) \\ &= 3^2 + 24 \div 2 - (4 + 16) \\ &= 3^2 + 24 \div 2 - 20 \\ &= 9 + 24 \div 2 - 20 \\ &= 9 + 12 - 20 \\ &= 21 - 20 \\ &= 1 \end{aligned}$	<p>14. Simplify: <math>16 + 8^2 \div (10 - 2)</math></p> <p>A. 8</p> <p>B. 10</p> <p>C. 20.4</p> <p>D. 24</p>