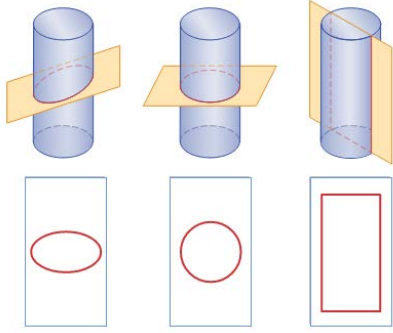
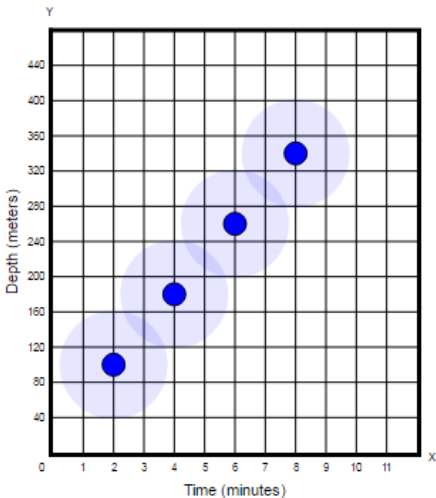


Item Number	Answer Key	Evidence Statement Key								
1.	D, E, F	7.NS.1c-1								
2.	D	7.NS.3								
3.	B	7.RP.2d								
4.	D, E	7.EE.1								
5.	$-\left(\frac{50}{8}\right) \quad \text{or} \quad -\left(\frac{-50}{-8}\right)$	7.NS.2b-1								
6.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><math>200 - 0.25(200)</math></td> <td style="padding: 5px;"><math>200 - 0.35(200)</math></td> </tr> <tr> <td style="padding: 5px;"><math>200 - 0.65(200)</math></td> <td style="padding: 5px;"><math>200 - 0.75(200)</math></td> </tr> <tr> <td style="padding: 5px;"><math>0.25(200)</math></td> <td style="padding: 5px;"><math>0.35(200)</math></td> </tr> <tr> <td style="padding: 5px;"><math>0.65(200)</math></td> <td style="padding: 5px;"><math>0.75(200)</math></td> </tr> </table>	$200 - 0.25(200)$	$200 - 0.35(200)$	$200 - 0.65(200)$	$200 - 0.75(200)$	$0.25(200)$	$0.35(200)$	$0.65(200)$	$0.75(200)$	7.EE.2
$200 - 0.25(200)$	$200 - 0.35(200)$									
$200 - 0.65(200)$	$200 - 0.75(200)$									
$0.25(200)$	$0.35(200)$									
$0.65(200)$	$0.75(200)$									
7.	C	7.RP.2b								
8.	C	7.NS.3								
9.	A	7.NS.1b-1								
10.	C	7.EE.4a-1								
11.	4	7.RP.2b								
12.	B	7.NS.2b-2								
13.	$n = -5$ $x = 0$	7.EE.4a-2								
14.	C	7.RP.2c								

15.	D, E	7.NS.1d
16.	C	7.EE.1
17.	A, D, F	7.SP.1
18.	Part A: 29.85 Part B: 9.5	7.RP.3-2
19.	See Rubric	7.D.1
20.		7.G.3
21.	$\frac{1}{216}$ or equivalent	7.SP.8a
22.	C	7.SP.6
23.	Part A: 1.20 Part B: 2.10	7.EE.3
24.	Part A: B Part B: 9 Part C: A Part D: B	7.RP.3-1
25.	<p>Part A: <b>Submarine Depth</b></p>  <p>Part B: See Rubric</p>	7.C.4

26.	3.20, 3.21, 3.22, 3.23, 3.24, or 3.25 accepted	7.RP.1
27.	See Rubric	7.D.4
28.	Part A: See Rubric Part B: See Rubric	7.C.8
29.	Part A: 43.96, 43.98, 43.99, or 44 accepted Part B: A	7.G.4-1
30.	$\frac{\boxed{1}}{\boxed{2}}$ or equivalent	7.RP.1
31.	Part A: 294 Part B: C	7.SP.2
32.	See Rubric	7.C.7-3
33.	Select from the drop-down menus to correctly complete each sentence. During that week, <input type="text" value="Liz"/> typically rode further each day because the <input type="text" value="mean"/> of her data is greater. During that week, <input type="text" value="Liz"/> typically rode about the same number of miles each day because the <input type="text" value="range"/> of her data is smaller.	7.SP.4
34.	Part A: 15 Part B: 192	7.G.1
35.	Part A: 1.50 Part B: See Rubric Part C: See Rubric	7.D.2
36.	A, D	7.RP.2a
37.	Part A: See Rubric Part B: See Rubric	7.C.1-1
38.	Part A: C Part B: 33.25	7.EE.3

### #19 Rubric

Score	Description
3	<p>Student response includes each of the following 3 elements.</p> <ul style="list-style-type: none"> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student writes a correct equation.</li> </ul> </li> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides the correct price of one museum ticket, \$8.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a valid explanation or work.</li> </ul> </li> </ul> <p>Sample Student Response:</p> $4(x + 1.50) = 38 \text{ or equivalent}$ $4x + 6 = 38$ $4x = 32$ $x = 8$ <p>The cost of one ticket is \$8.</p>
2	Student response includes 2 of the above elements.
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.

### #25 Rubric Part A (Machine Scored)

Score	Description
1	<p>Student response includes the following element.</p> <ul style="list-style-type: none"> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ Student correctly plots the points (2, 100), (4, 180), (6, 260), and (8, 340) on the coordinate grid.</li> </ul> </li> </ul>
0	Student response is incorrect or irrelevant.

### #25 Rubric Part B

Score	Description
2	<p>Student response includes both of the following 2 elements.</p> <ul style="list-style-type: none"> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ Student provides a valid explanation, using the table, of why the</li> </ul> </li> </ul>

	<p>relationship is not proportional.</p> <ul style="list-style-type: none"> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ Student provides a valid explanation, using the graph, of why the relationship is not proportional.</li> </ul> </li> </ul> <p>Sample Student Response:</p> <p>The relationship is not proportional. The table supports that the relationship is not proportional because the ratio between the two quantities is not the same for each x- and y-value.</p> $\frac{100}{2} \neq \frac{180}{4} \neq \frac{260}{6} \neq \frac{340}{8}$ <p>Because the ratios are not equal, the student can conclude that the relationship is not proportional.</p> <p>The graph supports that the relationship is not proportional because the points I plotted on the graph of the relationship lie on a line, but the line does not intersect the origin. Instead, it intersects the y-axis at the point (0, 20). Therefore, the relationship between depth and time is not proportional.</p> <p>(If students correctly apply this method, count their work as correct.)</p>
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.

### #27 Rubric

Score	Description
<b>3</b>	<p>Student response includes each of the following 3 elements.</p> <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a number or a range of numbers that fall(s) between 120 and 136.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides an estimation procedure to approximate the number of servings that can be dispensed before the juice dispenser needs to be refilled.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student correctly applies the estimation procedure to determine a reasonable number of servings in a filled juice</li> </ul> </li> </ul>

	<p>dispenser.</p> <p>Sample Student Response:</p> <p>“Approximately 7 out of 10 students choose a 4-ounce serving. Therefore, approximately 3 out of 10 students choose the 8-ounce serving. So, for every 10 students, the total amount of juice dispensed is approximately <math>7 \times 4 + 3 \times 8 = 52</math> fluid ounces. This means that juice is dispensed at a rate of 5.2 fluid ounces per serving.”</p> <p>“Since a typical juice serving is 5.2 fluid ounces, I need to divide 640 by 5.2 to get the number of servings of juice in the full dispenser. And <math>640 \div 5.2</math> is about 123 servings.”</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• The student may receive up to a total of 1 modeling point if he or she computes the correct answer but shows insufficient work to indicate a correct modeling process.</li> <li>• The student may receive only the computation point if he or she provides a reasonable estimate but does not include any work or modeling to explain how the estimate was determined.</li> <li>• The student may receive credit for providing equivalent expressions in the modeling process.</li> </ul>
<b>2</b>	Student response includes 2 of the above elements.
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.

### #28 Rubric Part A

Score	Description
<b>2</b>	<p>Student response includes the following 2 elements.</p> <ul style="list-style-type: none"> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides an explanation and work showing that expression 1 is equivalent to the expression the teacher wrote.</li> </ul> </li> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides an explanation and work showing that expression 2 is equivalent to the expression the teacher wrote.</li> </ul> </li> </ul>

	<p>Sample Student Response:</p> <p>Both expressions could be equivalent to the expression written on the board, since it is possible to have more than one equivalent expression.</p> <p>If I start with the teacher’s expression and distribute, combine like terms, and then factor I can rewrite it so that it is the same as expression 1. This means that the student’s claim that expression 1 is equivalent to the teacher’s expression is correct.</p> $  \begin{aligned}  &12.2x + 50.6y + 3(1.4x - 2.6y) \\  &= 12.2x + 50.6y + 4.2x - 7.8y \\  &= 16.4x + 42.8y \\  &= 4(4.1x) + 4(10.7y) \\  &= 4(4.1x + 10.7y)  \end{aligned}  $ <p>If I start with the teacher’s expression and distribute, combine like terms, and then factor I can rewrite it so that it is the same as expression 2. This means that the student’s claim that expression 2 is equivalent to the teacher’s expression is correct.</p> $  \begin{aligned}  &12.2x + 50.6y + 3(1.4x - 2.6y) \\  &= 12.2x + 50.6y + 4.2x - 7.8y \\  &= 2(6.1x) + 2(25.3y) + 2(2.1x) - 2(3.9y) \\  &= 2(6.1x + 25.3y + 2.1x - 3.9y)  \end{aligned}  $
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.
<b>#28 Rubric Part B</b>	
<b>Score</b>	<b>Description</b>
2	<p>Student response includes the following 2 elements.</p> <ul style="list-style-type: none"> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides an explanation for which part of the student’s reasoning is correct and for which part of the student’s reasoning is incorrect.</li> </ul> </li> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides an example using different values for x and y to support his/her explanation.</li> </ul> </li> </ul>

	<p>Sample student response:</p> <p>The part of the student’s reasoning that is correct is that the value of each expression is the same when <math>x = 1</math> and <math>y = 1</math> is the same.</p> $12.2x + 50.6y + 3(1.4x - 2.6y)$ $12.2(1) + 50.6(1) + 3(1.4(1) - 2.6(1))$ $= 12.2 + 50.6 + 4.2 - 7.8$ $= 59.2$ <p>And</p> $59.2xy = 59.2(1)(1) = 59.2$ <p>The part of the student’s reasoning that is incorrect is that the student only checks for one substitution of the <math>x</math> and <math>y</math> values for each expression. In order for the expressions to be equivalent, they must have the same value for all values of <math>x</math> and <math>y</math>. This student has only shown the expressions are equivalent for one pair of values. Using <math>x = 1</math> and <math>y = 2</math> will show the expressions do not always have the same value, so Greg’s conjecture is not correct.</p> $12.2x + 50.6y + 3(1.4x - 2.6y)$ $12.2(1) + 50.6(2) + 3(1.4(1) - 2.6(2))$ $= 12.2 + 101.2 + 3(1.4 - 5.2)$ $= 12.2 + 101.2 + 4.2 - 15.6$ $= 102$ <p>And</p> $59.2xy = 59.2(1)(2) = 118.4$ <p>So we see that the two expressions are not equivalent for all values of <math>x</math> and <math>y</math>.</p>
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.



### #32 Rubric

Score	Description
3	<p>Student response includes each of the following 3 elements.</p> <ul style="list-style-type: none"><li>• <b>Reasoning component</b> = 1 point<ul style="list-style-type: none"><li>○ The student provides a correct description of the error made by Student P in step 1.</li></ul></li><li>• <b>Reasoning component</b> = 1 point<ul style="list-style-type: none"><li>○ The student provides a correct description of the error made by Student Q in step 3.</li></ul></li><li>• <b>Reasoning component</b> = 1 point<ul style="list-style-type: none"><li>○ The student provides a correct set of steps shown to determine the value of the expression, -40.92.</li></ul></li></ul> <p>Sample Student Response:</p> <p>Student P made one error, which occurred in step 1.</p> <p>From the original expression to step 1, each term in the first set of parentheses is multiplied by <math>-2.5</math>. The error in step 1 is that <math>-2.5 \times 3.1 = -7.75</math> not <math>7.75</math>. There are no additional errors in Student P's steps.</p> <p>Student Q made one error, which occurred in step 3.</p> <p>Since all terms in step 2 are negative or are being subtracted, <math>-1</math> can be factored from each term. This would leave only positive terms inside the parentheses.</p> <p>That is, the student should have indicated that <math>-3.5 - 7.75 - 29.67 = -(3.5 + 7.75 + 29.67)</math>.</p> <p>There are no additional errors in Student Q's steps.</p> <p>A correct set of steps to determine the value of the expression is shown.</p> $\begin{aligned} & -2.5(1.4 + 3.1) + 6.9(-4.3) \\ & -3.5 + -7.75 + -29.67 \\ & -3.5 - 7.75 - 29.67 = -40.92 \end{aligned}$ <p>or</p>

	$-2.5(1.4 + 3.1) + 6.9(-4.3)$ $-2.5(4.5) + -29.67$ $-11.25 + -29.67 = -40.92$  or other valid response
<b>2</b>	Student response includes 2 of the above elements.
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.

### #35 Rubric Part A (Machine Scored)

Score	Description
<b>1</b>	Student response includes the following element. <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a response of 1.50 or equivalent</li> </ul> </li> </ul>
<b>0</b>	Student response is incorrect or irrelevant.

### #35 Rubric Part B

Score	Description
<b>2</b>	Student response includes the following 2 elements. <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a response of 38 pages.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a correct modeling process to determine the number of pages in a small photo book costing \$57.</li> </ul> </li> </ul> <p>Sample Student Response:</p> <p>"The cost per page is \$1.50. So a book costing \$57 would have <math>57 \div 1.50 = 38</math> pages."</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• The student may receive a computation point for calculating the number of pages for a small photo book when the answer is based on the incorrect price per page from Part A.</li> <li>• The student may receive a modeling point for applying a correct strategy to find the number of pages for a small photo book based on</li> </ul>

	an incorrect price per page.
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.

### #35 Rubric Part C

Score	Description
3	<p>Student response includes the following 3 elements.</p> <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student determines a correct cost of \$68.25.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a correct modeling process to determine the cost per page for a large photo book.</li> </ul> </li> <li>• <b>Modeling component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student provides a correct modeling process to determine the cost for a large photo book with 35 pages.</li> </ul> </li> </ul> <p>Sample Student Response:</p> <p>“The cost per page for a large photo book is 30% more than the cost per page of a small photo book. So, the cost per page is <math>\\$1.50 \times 1.3 = \\$1.95</math>.”</p> <p>“The cost for a large photo book with 35 pages is <math>35 \times \\$1.95 = \\$68.25</math>.”</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• The student may receive a computation point for calculating the cost of a large photo book when the answer is based on the incorrect price per page for a small photo book from Part A.</li> <li>• The student may receive a modeling point for applying a correct strategy to find the price per page for a large photo book based on an incorrect price per page for the small photo book.</li> <li>• The student may receive a modeling point for applying a correct strategy to find the total cost for a large photo book based on an incorrect price per page.</li> </ul> <p><b>Further Notes:</b></p> <ul style="list-style-type: none"> <li>• The student may solve these using alternate methods and receive computation and modeling points for correct computations and modeling processes.</li> <li>• The student may receive a combined total of 3 points if the</li> </ul>

	<p>modeling processes are correct but the student makes one or more computational errors in Parts B and C resulting in incorrect answers or an incorrect conclusion.</p> <ul style="list-style-type: none"> <li>• The student may receive up to a total of 3 points if he or she computes the correct answers but shows no work or insufficient work to indicate correct modeling processes.</li> <li>• The student cannot receive more than 2 points for modeling if the explanations, while sufficient to indicate that the student had correct reasoning, contain nonsense statements.</li> </ul>
<b>2</b>	Student response includes 2 of the above elements.
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.

### #37 Rubric Part A

Score	Description
<b>2</b>	<p>Student response includes each of the following 2 elements.</p> <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student finds the difference between high and low tides for Location P, 7.9 feet. The student finds the high tide for Location R, 5.73 feet.</li> </ul> </li> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>○ The student shows work or explanation how both answers were determined.</li> </ul> </li> </ul> <p><b>NOTE:</b> A student could earn the points this alternative way:</p> <ul style="list-style-type: none"> <li>• 1 point: Finds the difference between high and low tides for Location P, 7.9 feet and shows work or explanation.</li> <li>• 1 point: Finds high tide for Location R, 5.73 feet and shows work or explanation.</li> </ul> <p>Sample Student Response:</p> <p>For Location P, I subtract the low tide from the high tide (<math>8.53 - 0.63</math>). For Location R, I add the difference between the tides and the low tide (<math>6.75 + (-1.02)</math>). (Accept other valid explanations.)</p> <p>The difference at Location P is 7.9 ft.</p>

	High tide at Location R is 5.73 ft.
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.
<b>#37 Rubric Part B</b>	
<b>Score</b>	<b>Description</b>
<b>2</b>	<p>Student response includes each of the following 2 elements.</p> <ul style="list-style-type: none"> <li>• <b>Computation component</b> = 1 point <ul style="list-style-type: none"> <li>◦ The student finds the value of the low tide at location T, 0.25 ft.</li> </ul> </li> <li>• <b>Reasoning component</b> = 1 point <ul style="list-style-type: none"> <li>◦ The student shows work or explains how the answer was found.</li> </ul> </li> </ul> <p>Sample Student Response:</p> <p>The low tide at location T is 0.25 ft. (Accept equivalent answers.)</p> <p>For a mean of <math>-0.27</math> the sum of the 4 low tides has to be <math>4(-0.27) = -1.08</math>.  Subtract the sum of the known low tides.  <math>-1.08 - (0.63 + (-0.94) + (-1.02))</math>  <math>= -1.08 - (-1.33)</math>  <math>= -1.08 + 1.33 = 0.25</math></p> <p>(Accept other valid explanations.)</p>
<b>1</b>	Student response includes 1 of the above elements.
<b>0</b>	Student response is incorrect or irrelevant.