A Progression Toward Mastery					
Assessment Task Item		**STEP 1** **Missing or incorrect answer and little evidence of reasoning or application of mathematics to solve the problem.**	**STEP 2** **Missing or incorrect answer but evidence of some reasoning or application of mathematics to solve the problem.**	**STEP 3** **A correct answer with some evidence of reasoning or application of mathematics to solve the problem, or an incorrect answer with substantial evidence of solid reasoning or application of mathematics to solve the problem.**	**STEP 4** **A correct answer supported by substantial evidence of solid reasoning or application of mathematics to solve the problem.**
1	**a** **8.EE.C.7b**	Student made no attempt to solve the problem or left the problem blank. Student may or may not have identified the variable.	Student did not set up an equation (i.e., guessed the answer). Student may or may not have identified the variable.	Student may or may not have set up correct equation. Student may or may not have identified the variable. Student may have made calculation errors.	Student identified the variable as "Let x be the amount of money Ofelia had" or something similar. AND Student set up a correct equation $x - 12 = \frac{1}{5}x$ or other equivalent version. AND Solved for the variable correctly, $x = 15$.
	b **8.EE.C.7b**	Student made no attempt to solve the problem or left the problem blank. May or may not have identified the variables.	Student did not set up an equation and guessed the answer. Student may or may not have identified the variable. Student may have made calculation errors. Student may have only answered part of the question, like the first number is 77, and not given all three numbers.	Student attempted to set up an equation. Student may have set up an incorrect equation. Student may or may not have identified the variables. Student may have made calculation errors. Student may have only answered part of the question, like the first number is 77, and not given all three numbers.	Student identified the variable as "Let x be the first integer." AND Student set up a correct equation $3x + 3 = 234$ or other equivalent version. AND Student solved the equation correctly. Identified all three numbers correctly. The first number is 77, the second is 78, and the third is 79.
	c **8.EE.C.7b**	Student made no attempt to solve the problem or left the problem blank. Student may or may not have identified the variable.	Student did not set up an equation and guessed the answer. Student may or may not have identified the variable.	Student attempted to set up an equation. Student may have set up an incorrect equation. Student may or may not have identified the variable.	Student identified the variable as "Let x be the number of pages Gil read last week" or something similar. AND Student set up a correct equation $x + 20 = 184$

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				Student may have made calculation errors leading to an incorrect answer.	or other equivalent version. AND Student solved for the number of pages Gil read last week as 164 pages.
2	**a** **8.EE.C.7a**	Student made no attempt to determine the type of solution or left the problem blank. Student determined 0 of the solution types correctly. Student may have attempted to determine the solutions by solving.	Student determined 1–2 of the solution types correctly. Student may have attempted to determine the solutions by solving.	Student determined 3–5 of the solution types correctly. Student may have attempted to determine the solutions by solving.	Determined 5 of the solutions types correctly. Equations 1 and 2 have unique solutions, equation 3 has no solution, equation 4 has infinitely many solutions, and equation 5 has no solution. AND Student determined the solutions by observation only.
	b **8.EE.C.7b**	Student made no attempt to solve the problem or left the problem blank.	Student used properties of equality incorrectly, e.g., subtracted 1 from just one side of the equation, or divided by 8 on just one side of the equation, leading to an incorrect solution.	Student correctly used properties of rational numbers to solve the equation, but may have made a computational error leading to an incorrect solution. For example, student may have subtracted 1 from each side of the equation, but $-15 - 1$ led to an incorrect answer. Student may or may not have verified their answer.	Student correctly used properties of rational numbers to solve the equation (i.e., found $x = -2$). There is evidence that the student verified their solution.
	c **8.EE.C.7b**	Student made no attempt to solve the problem or left the problem blank.	Student used the distributive property incorrectly on both sides of the equation, e.g., $7(2x + 5) = 14x + 5$ or $4x - x = 4$, leading to an incorrect solution.	Student used the distributive property correctly on one or both sides of the equation, but made a computational error leading to an incorrect solution. Student may or may not have verified their answer.	Student used the distributive property correctly on both sides of the equation leading to a correct solution (i.e., $x = -4$). There is evidence that the student verified their solution.
3	**a** **8.EE.B.5**	Student made no attempt to complete the table or used completely random numbers in the blanks.	Student completed the table incorrectly, but only because of a simple computational error in finding the cost of one pound of candy, leading to all other parts being incorrect.	Student completed 6–7 parts of the table correctly. A computational error led to 1–2 parts being incorrect.	Student completed all 8 parts of the table correctly. (See table below for correct answers.)

Gummy candy in pounds (x)	1	2	3	4	5	6	7	8	9
Cost (y)	$1.50	$3.00	$4.50	$.6.00	$7.50	$9.00	$10.50	$12.00	$13.50

b **8.EE.B.5**	Student made no attempt to put the data on the graph or points were put in randomly.	Student plotted data points on the graph, but may have misplaced a few points. <u>OR</u> Student may have inversed the data (i.e., plotted points according to (y, x) instead of (x, y)).	Student plotted 6–7 data points correctly according to the data in their table.	Student plotted all 8 data points correctly according to the data in their table.
c **8.EE.B.5**	Student left item blank.	Student may have performed a computation to prove the mistake. Little or no reference to the graph was made in the argument.	Student made a weak argument as to why ($1.5, 5$) could not be correct. Student may have connected the dots on the graph to show ($1.5, 5$) could not be correct.	Student made a convincing argument as to why the point ($1.5, 5$) could not be correct. Student referenced the relationship being proportional and/or predicted that all points should fall into a line based on the existing pattern of points on the graph.

Name _____ Date _____

1. Transcribe and solve each of the following linear equations.

   a. Ofelia has a certain amount of money. If she spends 12 dollars, then she has $\frac{1}{5}$ of the original amount left. How much money did Ofelia have originally?

   LET x BE THE AMOUNT OF MONEY OFELIA HAD

   $$x - 12 = \frac{1}{5}x$$
   $$x - \frac{1}{5}x - 12 + 12 = \frac{1}{5}x - \frac{1}{5}x + 12$$
   $$\frac{4}{5}x = 12$$
   $$x = 12 \cdot \frac{5}{4} = \frac{60}{4}$$

   OFELIA HAD $15.00 ORIGINALLY.

   b. Three consecutive integers have a sum of 234. What are the three integers?

   LET x BE THE FIRST INTEGER

   $$x + x + 1 + x + 2 = 234$$
   $$3x + 3 = 234$$
   $$3x + 3 - 3 = 234 - 3$$
   $$3x = 231$$
   $$x = 77$$

   THE INTEGERS ARE 77, 78, AND 79.

   c. Gil is reading a book that has 276 pages. He has already read some of it last week. He plans to read 20 pages tomorrow. By then, he will be $\frac{2}{3}$ of the way through the book. How many pages did Gil read last week?

   LET x BE THE NUMBER OF PAGES GIL READ LAST WEEK.

   $$x + 20 = \frac{2}{3}(276)$$
   $$x + 20 = 184$$
   $$x + 20 - 20 = 184 - 20$$
   $$x = 164$$

   GIL READ 164 PAGES LAST WEEK.

2. a. Without solving, identify which of the following equations has a unique solution, no solution, or infinitely many solutions.

$3x + 5 = -2$ UNIQUE

$6(x - 11) = 15 - 4x$ UNIQUE

$12x + 9 = 8x + 1 + 4x$ NO SOLUTION

$2(x - 3) = 10x - 6 - 8x$ INFINITELY MANY SOLUTIONS

$5x + 6 = 5x - 4$ NO SOLUTION

b. Solve the following equation for a number x. Verify that your solution is correct.

$$-15 = 8x + 1$$
$$\underline{-1 \qquad\qquad -1}$$
$$\frac{-16}{8} = \frac{8x}{8}$$
$$-2 = x$$

$$-15 = 8(-2) + 1$$
$$-15 = -16 + 1$$
$$-15 = -15$$

c. Solve the following equation for a number x. Verify that your solution is correct.

$$7(2x + 5) = 4x - 9 - x$$
$$14x + 35 = 4x - x - 9$$
$$14x + 35 = 3x - 9$$
$$14x - 3x + 35 = 3x - 3x - 9$$
$$11x + 35 = -9$$
$$11x + 35 - 35 = -9 - 35$$
$$11x = -44$$
$$x = -4$$

$$7\left(2(-4) + 5\right) = 4(-4) - 9 - (-4)$$
$$7(-8 + 5) = -16 - 9 + 4$$
$$7(-3) = -25 + 4$$
$$-21 = -21$$

3. a.   Parker paid $4.50 for three pounds of gummy candy. Assuming each pound of gummy candy costs the same amount, complete the table of values representing the cost of gummy candy in pounds.

Gummy Candy in pounds (x)	1	2	3	4	5	6	7	8	9
Cost (y)	$1.50	$3.00	$4.50	$6.00	$7.50	$9.00	$10.50	$12.00	$13.50

b.   Graph the data on the coordinate plane.
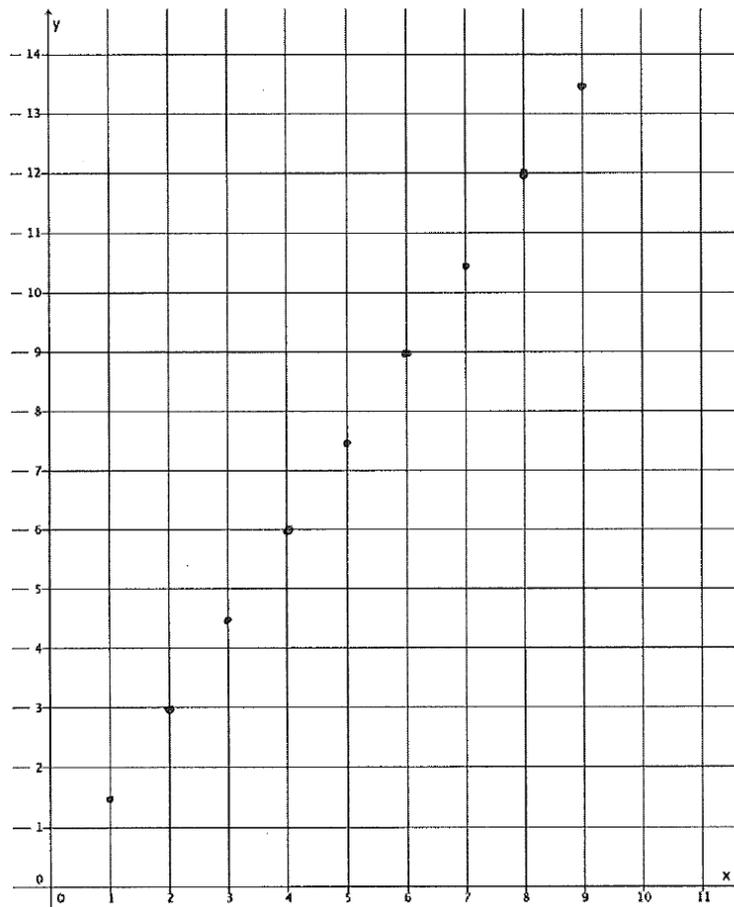
c.   On the same day, Parker's friend Peggy was charged $5 for one and a half pounds of gummy candy. Explain in terms of the graph why this must be a mistake.

EVEN THOUGH 1½ POUNDS OF CANDY ISN'T A POINT ON THE GRAPH, IT IS REASONABLE TO BELIEVE IT WILL FALL IN LINE WITH THE OTHER POINTS. THE COST OF 1½ POUNDS OF CANDY DOES NOT FIT THE PATTERN.