Problems of the Week
FSA Countdown Week 3 - M7

1. Femi keeps track of the number of gallons of gasoline he uses for each of several trips. 7.RP.2, 7.RP.2b

Part A: Complete the table. The vehicle consumes gasoline at a constant rate.

Part B: How much gasoline could Femi reasonably expect to use on a trip of 110 miles?
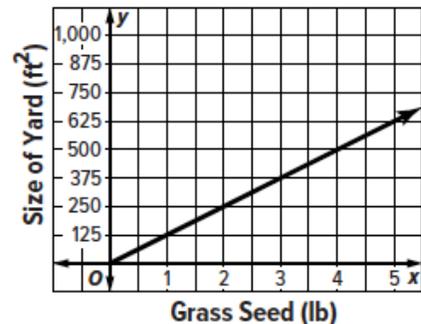
Distance (mi)	Gasoline (gal)
30	
40	2
55	
60	3
	3.5

2. A homeowner plans to turn a dirt yard into lawn. The graph illustrates the relationship of pounds of grass seed needed to the square footage of a yard being planted. Select whether each statement is true or false.
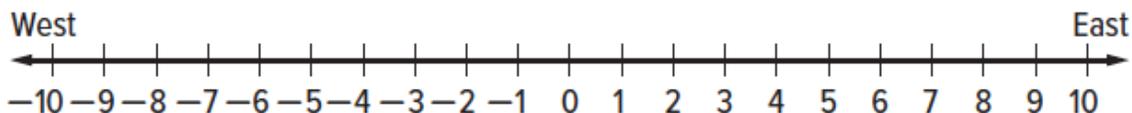
7.RP.2, 7.RP.2b, 7.RP.2d

True   False

☐   ☐   The unit rate shown in the graph is 1 pound of grass seed for every 125 square feet of yard.

☐   ☐   The line represents a direct variation because it passes through the origin.

☐   ☐   The unit rate can be determined by finding the point $(x, 1)$.

☐   ☐   A new type of grass seed has the unit rate of *1 pound:200 square feet*, which is twice the unit rate of the grass seed shown in the graph.

☐   ☐   The line for the new type of grass seed passes through (4, 800).

3.

A dog runs east and west in a field. The dog starts at the center and then completes the actions listed in the table *in sequence*. 7.NS.1

Action Number	Action
1	Runs 4 meters west
2	Runs 3 meters east
3	Runs 7.5 meters east
4	Runs 4 meters west
5	Runs 9 meters west

Part A: Mark the location of the dog after each action on the number line, assuming the center of the field is at 0. Label each location with the action number.

West   East

$$-10\ -9\ -8\ -7\ -6\ -5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5\ \ 6\ \ 7\ \ 8\ \ 9\ \ 10$$

Part B: Write an expression to represent each action of the dog, in order. Simplify the expression to validate your final answer from Part A.

4. Emily earned $4,410 working 3 months during her internship. Interns work 21 days each month. 7.RP.2, 7.RP.2b

Part A: Find the unit rate of dollars Emily earned per day.

Part B: Joe was paid $5,880 for 4 months of work and says he has a higher rate than Emily. Is Joe's claim correct? Justify your response.