

PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** February 25 to February 29**Day:** Friday

RISD Objective: Provided a system of equations or a word problem which can be modeled by a system, students will solve the problem graphically, or by using substitution, or by using elimination.

PROBLEM #113

Which statement correctly describes the relationship between the graphs of:

$$f(x) = x - 5$$

$$g(x) = \frac{1}{2}x - 5$$

- a) The graph of $g(x)$ is steeper than the graph of $f(x)$.
- b) The graph of $g(x)$ is more gentle than the graph of $f(x)$
- c) The graphs of both functions do NOT intersect.
- d) One line has a positive slope and one line has a negative slope.

Explain your reasoning.

MODEL SOLUTION #113

The choice b) is the correct choice.

Reasoning: The slope for $f(x)$ is 1 which means it rises 1 unit for every 1 unit it travels to the right. The slope for $g(x)$ is $\frac{1}{2}$ which means it rises $\frac{1}{2}$ unit for every 1 unit it travels to the right. Said another way $g(x)$ rises 1 units for every 2 units it travels to the right. That means that the graph of $g(x)$ is not as steep as the graph of $f(x)$.