a) One Solution.

$y = \underline{\text{but } -3} x + \underline{\hspace{1cm}}$ anything but -3   ANY # $\underline{6} x + 2y = 10$

differentslope

$m = -3$

b) No Solution.

Any # but 5

$y = \underline{-2x} x + \underline{4}$ $\underline{4} x + 2y = 10 - 4x$

$\underline{\hspace{0.5cm}} -4x$ $\dfrac{}{2}$

$Y = -2X + 5$

c) Many Solutions.

must be 5

$y = \underline{-\frac{1}{2}} x + \underline{5}$ $\underline{1} x + 2y = 10$

Solutions to a system of linear equations

One Solution: Lines intersect ⟶ Different Slope

No Solution: Lines are Parallel ⟶ Same Slope / Different y-int

Many Solutions: Same line ⟶ Same Slope / Same y-int

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2. On his daily run the FedEx driver has some small and large boxes to deliver. The number of small boxes is three more than twice as many large boxes. Small boxes weigh 3 pounds each and larges weight 8 pounds each. The total weight of all the boxes is 107 pounds. Write and solve a system of equations to find the number of small and large boxes are in the truck.

$107 = 14L + 9$

$98 = 14L$

$\dfrac{}{14} \quad \dfrac{}{14}$

$\boxed{\begin{array}{l} L = 7 \\ S = 17 \end{array}}$

Credit: Angela

$\boxed{\begin{array}{l} S = 2L + 3 \\ 107 = 3S + 8L \end{array}}$

$107 = 3(2L+3) + 8L$

$6L + 9 + 8L$