

a) $y = 3x$ (4, 12)

$2y - 5x = 4$

$2(3x) - 5x = 4$

$6x - 5x = 4$

$x = 4$

$y = 3(4)$

$y = 12$

(Check!)

$2(12) - 5(4) = 4$

$24 - 20 = 4$

$4 = 4 \checkmark$

b) $x - 4 = y$ (3, -1)

$-5y + 8x = 29$

$-5(x - 4) + 8x = 29$

$-5x + 20 + 8x = 29$

$3x + 20 = 29$

$\quad -20 \quad -20$

$3x = 9$

$x = 3$

(Check!)

$3 - 4 = y$

$-1 = y$

$-5(-1) + 8(3) = 29$

$5 + 24 = 29$

$29 = 29 \checkmark$

c) $2x + 2y = 18 \rightarrow \frac{2y}{2} = \frac{-2x + 18}{2}$

$y = -x + 9$

$x = 3 - y$

$y = -x + 3$

$2(3 - y) + 2y = 18$

$6 - 2y + 2y = 18$

$6 - 0 = 18$

$6 \neq 18$

NO SOLUTION!

Same Slope!
different y-int
Lines are parallel!

d) $c = -b - 11$

$3c + 6 = 6b$

(-3, -8)
(b, c)

$3(-b - 11) + 6 = 6b$

$-3b - 33 + 6 = 6b$

$-3b - 27 = 6b$

$\quad -27 \quad +3b$

$\frac{-27}{9} = \frac{9b}{9}$

$-3 = b$

$c = -(-3) - 11$ (Check!)

$c = 3 - 11$

$c = -8$

$3(-8) + 6 = 6(-3)$

$-24 + 6 = -18$

$-18 = -18 \checkmark$