$3x + 3y = 3$

$9x + 9y = 9$

$5x + 2y = 5$

$y = ax + 3$ $\quad y = \frac{1}{a}x - 2$

$a = 1$ $\quad \emptyset$

$a = 5$ $\quad 1$ sol

$4x - 3y = 16$

$x + y = -3$ $\quad x = -y - 3$

$4(-y-3) - 3y = 16$

$-4y - 12 - 3y = 16$ $\quad x = 4 - 3 = 1$

$-7y = 28$

$y = -4$ $\quad (1, -4)$

$$ax+b = cx+d$$

$$y_1 = ax+b$$

$$y_2 = cx+d$$

Solve $2x+3 = x+2$ By Graphing

$$y_1 = 2x+3$$

$$y_2 = x+2$$

$$x = -1$$

Absolute Value Equations

$$|ax+b| = |cx+d|$$

$$ax+b = cx+d \quad (+)$$

$$ax+b = -(cx+d) \quad (-)$$

Ex

$$|x+3| = |3x+1|$$

+

$x+3 = 3x+1$

$y_1 \quad y_2$

$\boxed{x = 1}$

−

$x+3 = -(3+1)$

$x+3 = -3x-1$

$y_1 \quad y_2$

$\boxed{x = -1}$

You need to rent a car for a week while on vacation. Company B charges $3/mile plus a flat fee of $150/week. Company D charges $4/mile plus a flat fee of $75/week. After how many miles are the totals the same?

(A) (B)

$3x + 150 = 4x + 75$

$y_1 \quad y_2$

At $x = 75$ miles, the cost is the same.