SOLVING LINEAR SYSTEMS

May 14

ex. 1: solve by substitution

$4x - y = 14$

$5x + 3y = 9$

$4x - 14 = y$

$5x + 3(4x - 14) = 9$

$5x + 12x - 42 = 9$

$17x = 51$

$x = 3$

$4(3) - 14 = y$

$12 - 14 = y$

$y = -2$

(x, y)

$(3, -2)$

CK

$5(3) + 3(-2)$

$15 - 6$

9 ✓

ex. 2 Solve by linear combination:

(addition - elimination)

$$\begin{cases} 3x - 8y = -3 \\ 2x - 3y = 5 \end{cases}$$

21 −24

3

−8

$9x - 24y = -9$

$-16x + 24y = -40$

$-7x = -49$

$x = 7$

$2(7) - 3y = 5$

$14 - 3y = -9$

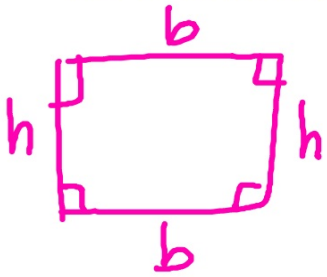
$-3y = -9$

$y = 3$

x y

$(7, 3)$

Ex. 3 The base of a rectangle is 1 less than 4 times its height. The perimeter is 48 inches. Find base and height.



$=$

$b = 4h - 1$ (4·5)

$2b + 2h = 48$

$2(4h-1) + 2h = 48$

$10h - 2 = 48$

$10h = 50$

$h = 5$ in

$b = 19$ in

Ex. 4

Packages of cookies cost $3 and packages of brownies cost $4. Mrs. Bryant bought 12 packages and spent $40. How many of each did she buy?

Brownies 4
Cookies 8

$-3(C + B = 12)$ → $-3C - 3B = -36$

$3C + 4B = 40$

$B = 4$