Warm up:

Solve.

1) 9x + 2y = 75

y = 3x

$3 \cdot 5 = 15$

$9x + 2(3x) = 75$

$9x + 6x = 75$

$\frac{15x}{15} = \frac{75}{15}$

$x = 5$

$x = 5$

$y = 15$

2) 2 apples and 3 oranges cost \$9. 4 apples and 2 oranges cost \$10. How much does each fruit cost?

apples \$1.50

oranges → \$2

$2(2a + 3r = 9)2$

$4a + 2r = 10$

$4a + 6r = 18$

$-(4a + 2r = 10)$

$\frac{4r}{4} = \frac{8}{4}$

$r = 2$

$4a + 4 = 10$

$-4 \quad -4$

$\frac{4a}{4} = \frac{6}{4}$

$a = \frac{6}{4} = \frac{3}{2} = 1.5$

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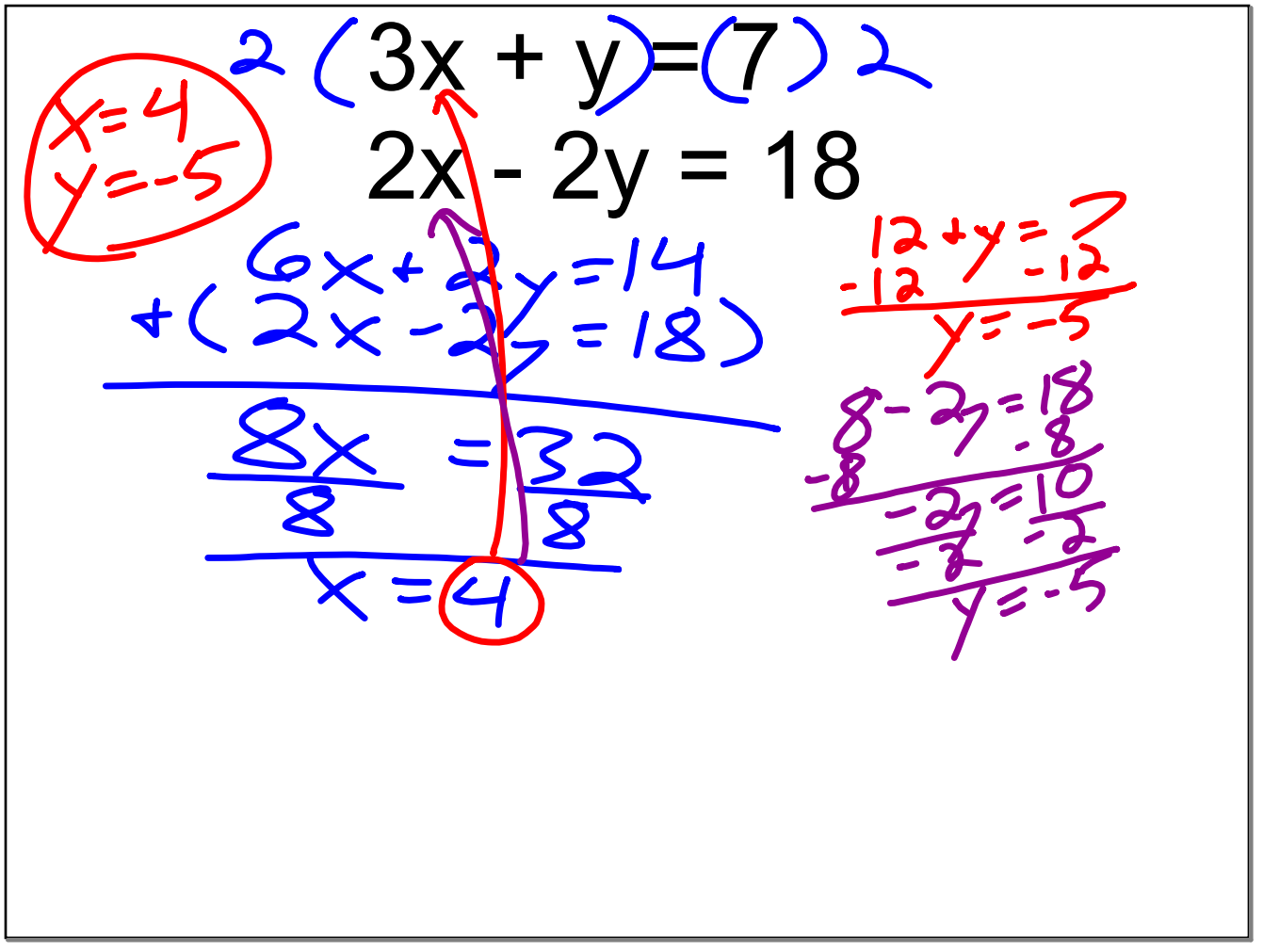
Showdown


2(3x + y)=(7)2
2x - 2y = 18
x=4
y=-5
6x+2y=14
+(2x-2y=18)
8x=32
8 8
x=4
12+y=7
-12 -12
y=-5
8-2y=18
-8 -8
-2y=10
-2 -2
y=-5

$2(3x + 7y = 10)2$

$6x + 14y = 2$

$6x + 14y = 20$

$-(6x + 14y = 2)$

$0 = 18$

no solution

Solve by graphing.

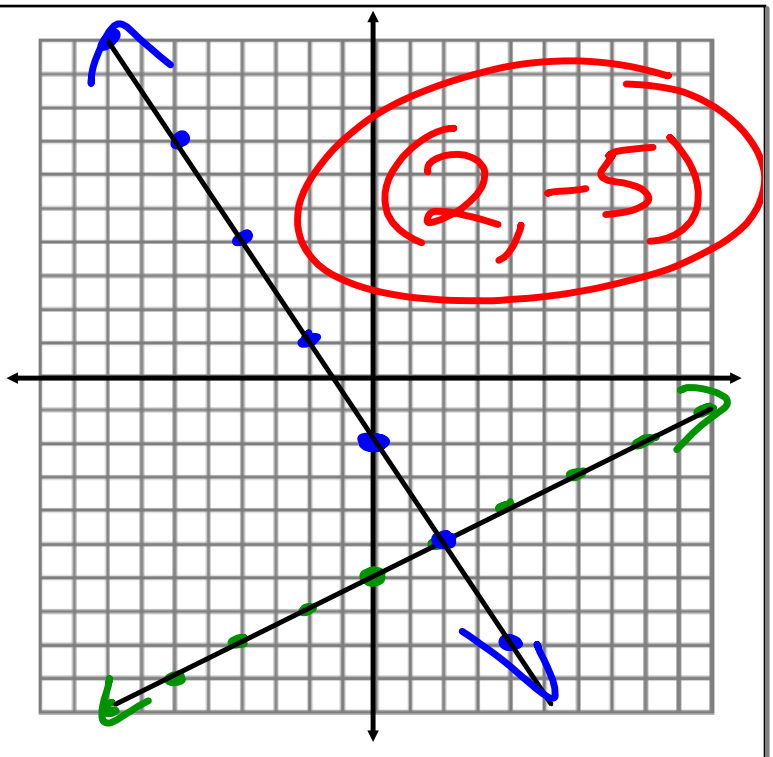
$y = \frac{1}{2}x - 6$

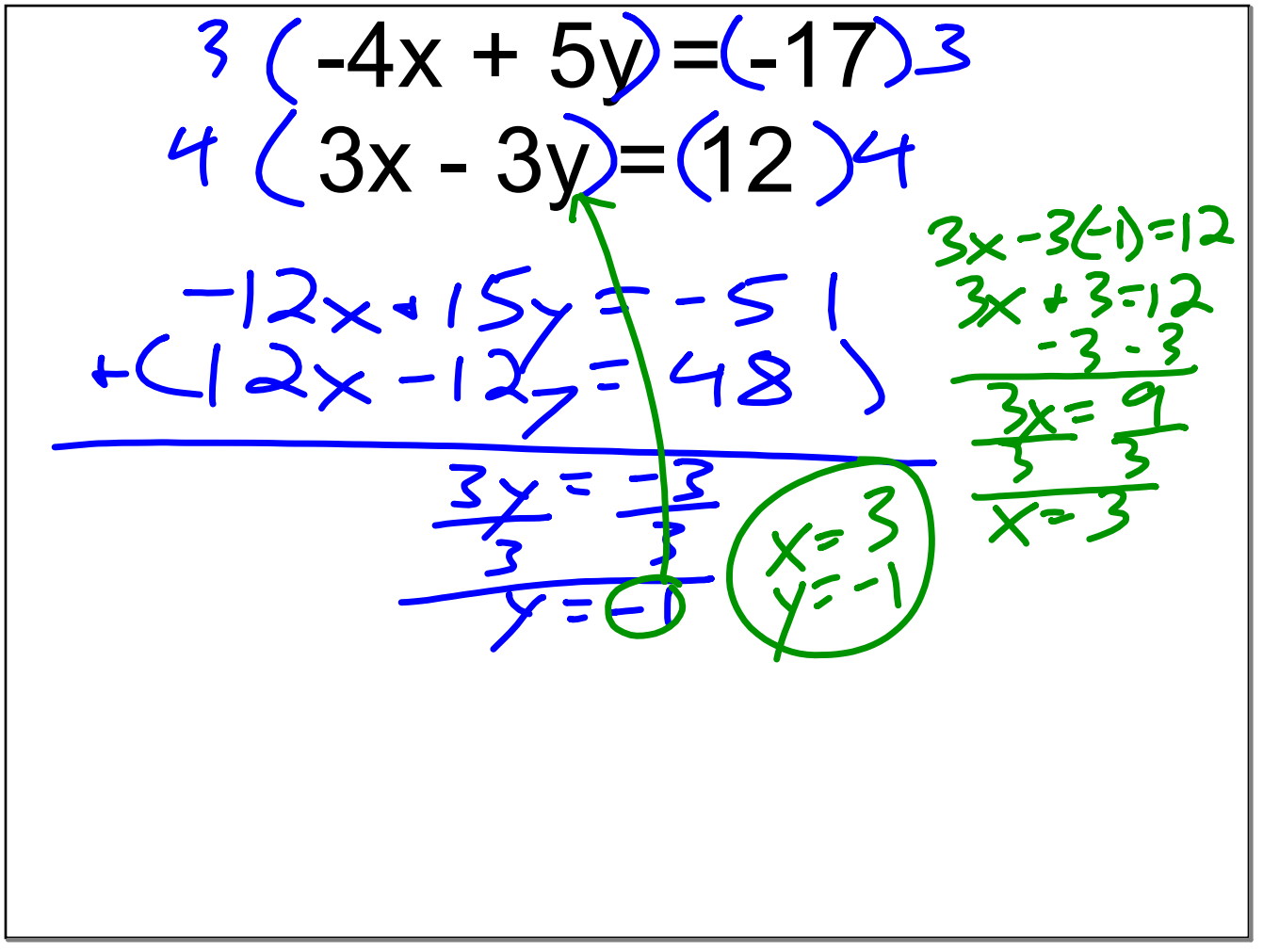
$3x + 2y = -4$

$-3x \quad -3x$

$\frac{2y}{2} = \frac{-3x - 4}{2}$

$y = -\frac{3}{2}x - 2$




3(-4x + 5y)=(-17)3
4(3x - 3y)=(12)4
-12x+15y=-51
+(12x-12y=48)
3y=-3
3 3
y=-1
3x-3(-1)=12
3x+3=12
-3 -3
3x=9
3 3
x=3
x=3
y=-1

$$2a - 5b = 45$$
$$b = 2a - 1$$

The country fair is in town. On Friday night they sold a total of 943 tickets and took in a total of $3684. If they charged $8 for adult tickets and $3 for child tickets, how many adults attended? How many children attended?

$8a + 3c = 3684$

$a + c = 943$

On Elsa's farm, the number of cows is 3 more than the number of goats. If the total number of cows and goats is 47, how many of each animal does she have?

$$8x - 12y = 20$$

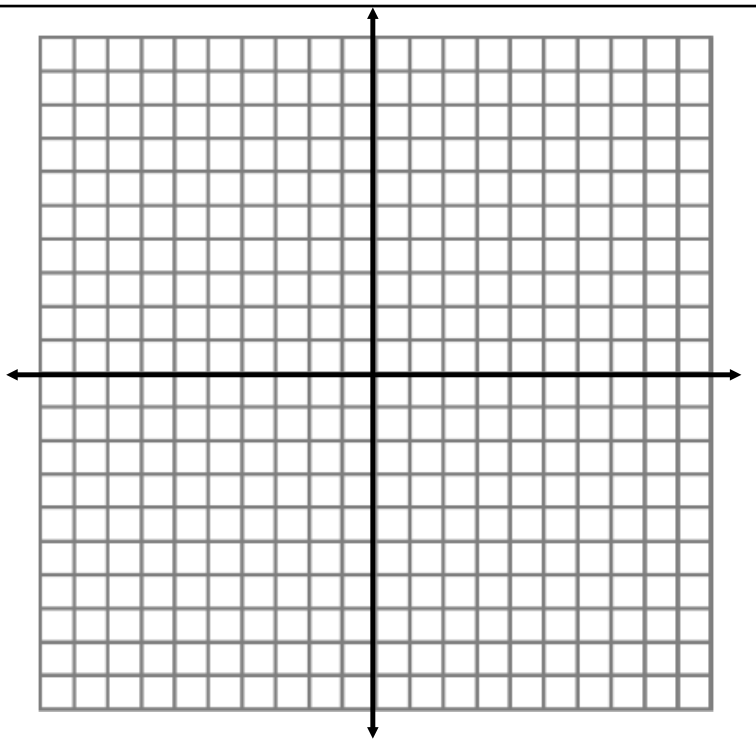
$$2x - 3y = 5$$

$$c = 2d - 4$$
$$3c + 2d = 36$$

Solve by graphing.

$y = x + 4$

$y = -x - 2$



Five candles and six pens cost fifty-four dollars. Three candles and seven pens cost forty-six dollars. How much does each item cost?

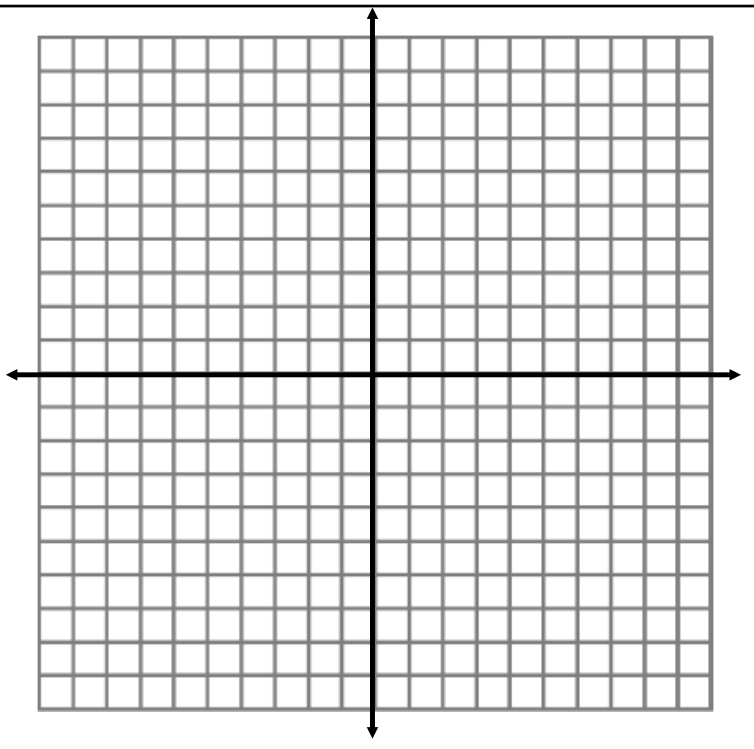
$$5a - 2b = 0$$
$$2a - 3b = -11$$

One number is 3 less than twice another. Their sum is 18. What are the numbers?

Solve by graphing.

$y = 2x - 5$

$y = -3x + 10$



$$-3x + 2 = y$$

$$4x + 2y = -2$$

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