

6-4 Elimination Using Multiplication

Multiply a constant through one or both equations to create the same or opposite coefficients.... Remember
 SAME=Subtract Opposite=Add

Use elimination to solve each system of equations.

1. $2x + 3y = 6$
 $x + 2y = 5$

$(-3, 4)$

2. $2m + 3n = 4$
 $-m + 2n = 5$

$(-1, 2)$

3. $3a - b = 2$
 $a + 2b = 3$

$(1, 1)$

4. $4x + 5y = 6$
 $6x - 7y = -20$

$(-1, 20)$

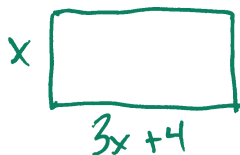
5. $4x - 3y = 22$
 $2x - y = 10$

$(4, -2)$

6. $3x - 4y = -4$
 $x + 3y = -10$

$(-4, -2)$

7. **GARDENING** The length of Sally's garden is 4 meters greater than 3 times the width. The perimeter of her garden is 72 meters. What are the dimensions of Sally's garden?



$2(x) + 2(3x+4) = 72$ $28m \times 8m$
 $2x + 6x + 8 = 72$
 $8x = 64$
 $x = 8$

8. **FUNDRAISING** Benji and Joel are raising money for their class trip by selling gift wrapping paper. Benji raises \$39 by selling 5 rolls of red wrapping paper and 2 rolls of foil wrapping paper. Joel raises \$57 by selling 3 rolls of red wrapping paper and 6 rolls of foil wrapping paper. For how much are Benji and Joel selling each roll of red and foil wrapping paper?

$5w + 2f = 39$
 $3w + 6f = 57$

$w = \$5$ $f = \$7$

1. $4x - 2y = -14$

2. $2x + y = 0$

NAME _____

DATE _____

PERIOD _____

1.) $3x - y = -8$

$(-1, 5)$

2.) $5x + 3y = 2$

$(-2, 4)$

3. $5x + 3y = -10$

$3x + 5y = -6$

$(-2, 0)$

4. $2x + 3y = 14$

$3x - 4y = 4$

$(4, 2)$

5. $2x - 3y = 21$

$5x - 2y = 25$

$(3, -5)$

6. $3x + 2y = -26$

$4x - 5y = -4$

$(-6, -4)$

7. $3x - 6y = -3$

$2x + 4y = 30$

$(7, 4)$

8. $5x + 2y = -3$

$3x + 3y = 9$

$(-3, 6)$

9. Two times a number plus three times another number equals 13. The sum of the two numbers is 7. What are the numbers?

$$\begin{aligned} 2x + 3y &= 13 \\ x + y &= 7 \end{aligned}$$

$8, -1$

10. Four times a number minus twice another number is -16 . The sum of the two numbers is -1 . Find the numbers.

$$\begin{aligned} 4x - 2y &= -16 \\ x + y &= -1 \end{aligned}$$

$3, -2$

11. **FUNDRAISING** Trisha and Byron are washing and vacuuming cars to raise money for a class trip. Trisha raised \$38 washing 5 cars and vacuuming 4 cars. Byron raised \$28 by washing 4 cars and vacuuming 2 cars. Find the amount they charged to wash a car and vacuum a car.

$5c + 4v = 38$

$4c + 2v = 28$

$\$6 = \text{wash}$

$\$2 = \text{vacuum}$