

# Solve simultaneous linear equations where one of the coefficients is equal

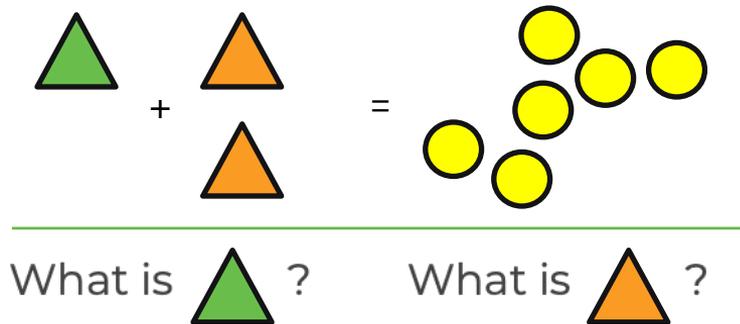
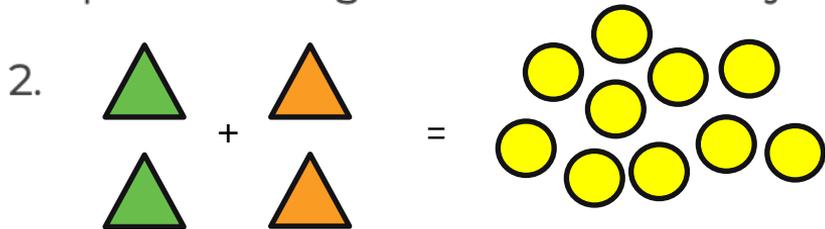
Maths

Mrs Dennett



# Solve equations where one of the coefficients is equal

1. If  $x + y = 12$ , list all the possible pairs of integer values for  $x$  and  $y$ .



3. Solve

$$2x + y = 21$$

$$x + y = 12$$

4. Solve by subtraction.

a)  $3x + 5y = 5$

$$3x + 9y = -3$$

b)  $5g + h = 7.5$

$$5g - 2h = 0$$

c)  $x - y = -1$

$$2x - y = 0$$

d)  $6v - 2w = 42$

$$4v - 2w = 26$$



# Solve equations where one of the coefficients is equal

5. Solve  $3j + 2k = 16$   
 $6j - 2k = 2$

6. Solve by addition.

a)  $4x + 3y = 29$       b)  $6g - h = -10$   
 $2x - 3y = 1$        $-14g + h = 18$

c)  $4.5x - y = 15.5$       d)  $-3y + 4z = -13$   
 $0.5x + y = -0.5$        $-6y - 4z = -32$

7. Solve

a)  $x + y = 14$       b)  $6a - 3b = 21$   
 $x - y = 10$        $6a + 3b = 33$

8. Sami and James are buying fish and chips for lunch.

Here are their orders

Sami  
3 fish  
4 portions of  
chips

Total cost £16.80

James  
8 fish  
4 portions of  
chips

Total cost

~~£36.80~~

How much does one fish and one portion of chips cost?

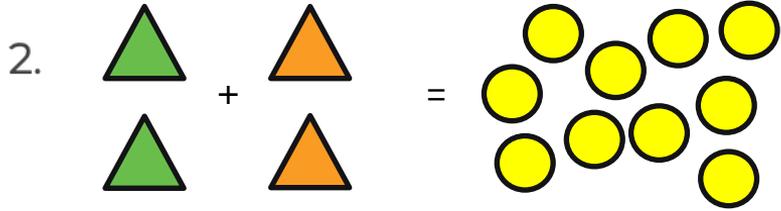


# Answers



# Solve equations where one of the coefficients is equal

1. If  $x + y = 6$ , list all the possible pairs of integer values for  $x$  and  $y$ .

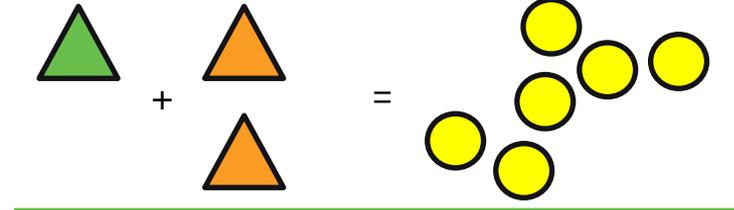


- $x = 1, y = 5$
- $x = 2, y = 4$
- $x = 3, y = 3$
- $x = 4, y = 2$
- $x = 5, y = 1$

$$2x + y = 21$$

$$x + y = 12$$

$x = 9, y = 3$



What is  ?

What is  ?

4. Solve by subtraction.

a)  $3x + 5y = 5$

$3x + 9y = -3$

$x = 5, y = -2$

b)  $5g + h = 7.5$

$5g - 2h = 0$

$g = 1, h = 2.5$

c)  $x - y = -1$

$2x - y = 0$

$x = 1, y = 2$

d)  $6v - 2w = 42$

$4v - 2w = 26$

$v = 8, w = 3$



# Solve equations where one of the coefficients is equal

5. Solve

$$3j + 2k = 16$$

$$6j - 2k = 2$$

$$j = 2, k = 5$$

6. Solve by addition.

a)  $4x + 3y = 29$

b)  $6g - h = -10$

$$2x - 3y = 1$$

$$-14g + h = 18$$

$$x = 5, y = 3$$

$$g = -1, h = 4$$

c)  $4.5x - y = 15.5$

d)  $-3y + 4z = -13$

$$0.5x + y = -0.5$$

$$-6y - 4z = -32$$

$$x = 3, y = -2$$

$$y = 5, z = 0.5$$

7. Solve these pairs of simultaneous equations.

a)  $x + y = 14$

b)  $6a - 3b = 21$

$$x - y = 10$$

$$6a + 3b = 33$$

$$x = 12, y = 2$$

$$a = 4.5, b = 2$$

8. Sami and James are buying fish and chips for lunch. Here are their orders:

Sami

3 fish

4 portions of chips

Total cost £16.80

James

8 fish

4 portions of chips

Total cost £36.80

How much does one fish and one portion of chips cost?  $\pounds 5.20$

