

Solve equations that first involve  
simplification  $2(x + 3) + 5x = 15$



# Solve equations that first involve simplification

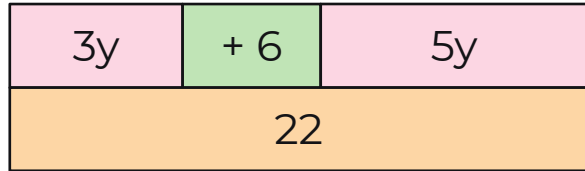
1. Which equation is not represented by the bar model? Explain why.

$$3(y+2) + 5y = 22$$

$$3y + 6 + 5y = 22$$

$$3(y+6) + 5y = 22$$

$$8y + 6 = 22$$



2. Solve the equations

a)  $2(a + 3) + 5 = 15$

b)  $5 + 2(a - 3) = 15$

c)  $15 = 2(a + 3) - 2.5$

3. Amir is  $x$  years old.

Tommy is 5 years younger than Amir.

Dora is twice as old as Tommy.

The sum of their ages is 33.

a) Form an equation in terms of  $x$ .

b) Solve the equation and work out how old Dora is.



# Solve equations that first involve simplification

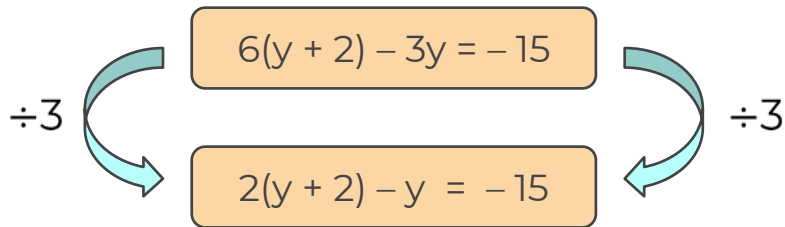
4. Solve the equations.

a)  $2(a + 3) + 5 = -15$

b)  $5 - 2(a - 3) = 15$

c)  $-15 = -2(a + 3) - 2.5$

5. Spot the mistake.



6. Solve the equations.

a)  $6(y + 2) - 3y = -15$

b)  $2(y + 2) - y = -5$

c)  $-10 = 4(y + 2) - 2y$

d)  $y - 2(y + 2) = -5$

What do you notice about  
The questions above?



# Answers



# Solve equations that first involve simplification

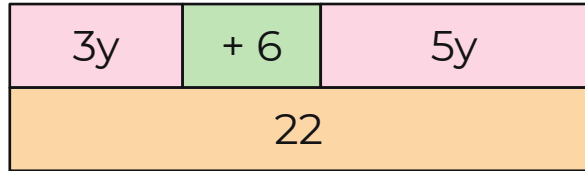
1. Which equation is not represented by the bar model? Explain why.

$$3(y+2) + 5y = 22$$

$$3y + 6 + 5y = 22$$

$$3(y+6) + 5y = 22$$

$$8y + 6 = 22$$



2. Solve the equations

a)  $2(a + 3) + 5 = 15$       $a = 2$

b)  $5 + 2(a - 3) = 15$       $a = 8$

c)  $15 = 2(a + 3) - 2.5$       $a = 5.75$

3. Amir is  $x$  years old.

Tommy is 5 years younger than Amir.

Dora is twice as old as Tommy.

The sum of their ages is 33.

$$\text{Amir} = x \quad \text{Tommy} = x - 5 \quad \text{Dora} = 2(x - 5)$$

a) Form an equation in terms of  $x$ .

$$4x - 15 = 33$$

b) Solve the equation and work out

how old Dora is.      $x = 12$

Dora is 14 years old



# Solve equations that first involve simplification

4. Solve the equations.

a)  $2(a + 3) + 5 = -15$   $a = -13$

b)  $5 - 2(a - 3) = 15$   $a = -2$

c)  $-15 = -2(a + 3) - 2.5$   $a = 3.25$

5. Spot the mistake.

$6(y + 2) - 3y = -15$

$2(y + 2) - y = -15$

Only one side of the equation has been divided by three

6. Solve the equations.

a)  $6(y + 2) - 3y = -15$   $y = -9$

b)  $2(y + 2) - y = -5$   $y = -9$

c)  $-10 = 4(y + 2) - 2y$   $y = -9$

d)  $y - 2(y + 2) = 5$   $y = -9$

What do you notice about the questions above?

All are rearrangements of the same equation.

