Equations with brackets

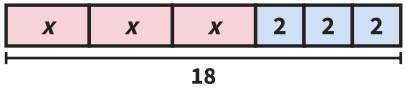
ANSWERS

1

Solve

$3(x+2)=18$

put the bars in one row



Expand	$3x + 6 = 18$
− 6 both sides	$3x = 12$
÷ 3 both sides	$x = 4$

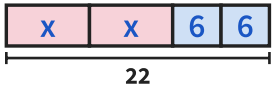
Answer $x = 4$

2

Solve

$2(x+6)=22$

put the bars in one row



Expand	$2x + 12 = 22$
− 12 both sides	$2x = 10$
÷ 2 both sides	$x = 5$

Answer $x = 5$

3 expand first

Solve

$4(x+1)=36$

Expand	$4x + 4 = 36$
− 4 both sides	$4x = 32$
÷ 4 both sides	$x = 8$

Answer $x = 8$

4

Solve $5(x-4)=15$

Expand	$5x - 20 = 15$
+ 20 both sides	$5x = 35$
÷ 5 both sides	$x = 7$

Answer $x = 7$

5

Solve $3(2x-1)=21$

Expand	$6x - 3 = 21$
+ 3 both sides	$6x = 24$
÷ 6 both sides	$x = 4$

Answer $x = 4$

6

Solve $3(x+4)+2(x-2)=33$

Expand	$3x + 12 + 2x - 4 = 33$
Collect like terms	$5x + 8 = 33$
− 8 both sides	$5x = 25$
÷ 5 both sides	$x = 5$

Answer $x = 5$

7

Kai solves $4(x + 3) = 40$. His first line is $4x + 3 = 40$. Explain his mistake. Then solve the equation.

The 4 must multiply the 3 as well

$4x + 12 = 40$, so $4x = 28$

$x = 7$

Answer

8

A gardener plants 5 rows of flowers. Each row has x tulips and 3 daffodils. She plants 65 flowers altogether, so $5(x + 3) = 65$. Explain why. Then solve it to find x.

5 rows, each with $x + 3$ flowers

$5x + 15 = 65$, so $5x = 50$

$x = 10$

Answer

Equations with brackets *further practice*

ANSWERS

9

Solve $6(x - 3) = 42$

Expand — $6x - 18 = 42$

+ 18 both sides — $6x = 60$

÷ 6 both sides — $x = 10$

Answer $x = 10$

10

Solve $4(3x + 2) = 44$

Expand — $12x + 8 = 44$

− 8 both sides — $12x = 36$

÷ 12 both sides — $x = 3$

Answer $x = 3$

11

Solve $3(x + 8) = 15$

Expand — $3x + 24 = 15$

− 24 both sides — $3x = -9$

÷ 3 both sides — $x = -3$

Answer $x = -3$

12

Solve $2(x - 3) = 7$

Expand — $2x - 6 = 7$

+ 6 both sides — $2x = 13$

÷ 2 both sides — $x = 6.5$

Answer $x = 6.5$

13

Solve $4(x + 2) + 3(x + 5) = 51$

Expand — $4x + 8 + 3x + 15 = 51$

Collect like terms — $7x + 23 = 51$

− 23 both sides — $7x = 28$

÷ 7 both sides — $x = 4$

Answer $x = 4$

14

Mo solves $5(x - 3) = 30$ and gets $x = 3$.
Put his answer back into the equation to check it. Then solve the equation.

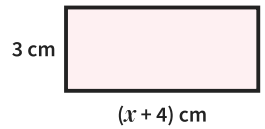
$5(3 - 3) = 0$, not 30

$5x - 15 = 30$, so $5x = 45$

Answer $x = 9$

15

The perimeter of this rectangle is 26 cm. Find x.



$2(x + 4) + 6 = 26$

$2x + 14 = 26$, so $2x = 12$

Answer $x = 6$

16

Jay says, "5 does not go into 32, so $5(x + 2) = 32$ has no answer."
Is he right? Show how you know.

No. $5x + 10 = 32$, so $5x = 22$

$x = 4.4$ (check: $5 \times 6.4 = 32$)

Answer No, $x = 4.4$