Solving equations with variables on both sides

Mana Maths

Te reo Māori terms

whārite
equation
Open in Te Aka

taurangi
variable
Open in Te Aka

kīanga
expression
Open in Te Aka

whakaoti
solve
Open in Te Aka

Foundation: Solving equations with variables on both sides

1. Solve for x:
$3x = 2x + 5$

2. Solve for y:
$4y = y + 9$

3. Solve for a:
$5a = 3a + 8$

4. Solve for b:
$7b = 2b + 15$

5. Solve for m:
$6m = 4m + 10$

6. Solve for n:
$8n = 5n + 12$

7. Solve for p:
$9p = 6p + 15$

8. Solve for q:
$10q = 7q + 18$

9. Solve for r:
$12r = 8r + 20$

10. Solve for s:
$15s = 9s + 24$

11. Solve for t: $18t = 12t + 36$

12. Solve for u:
$20u = 14u + 36$

13. Solve for v:
$24v = 16v + 40$

14. Solve for w:
$30w = 20w + 50$

15. Solve for x:
$36x = 24x + 60$

16. Solve for y:
$42y = 28y + 70$

Proficient: Solving equations with variables on both sides

1. Solve for x:
$3x + 5 = 2x + 10$

2. Solve for y:
$4y - 3 = 2y + 7$

3. Solve for a:
$5a + 2 = 3a + 12$

4. Solve for b:
$7b - 4 = 3b + 16$

5. Solve for m:
$6m + 8 = 4m + 20$

6. Solve for n:
$8n - 5 = 5n + 13$

7. Solve for p:
$9p + 3 = 6p + 21$

8. Solve for q:
$10q - 6 = 7q + 15$

9. Solve for r:
$12r + 4 = 8r + 28$

10. Solve for s:
$15s - 9 = 9s + 27$

11. Solve for t: $18t + 6 = 12t + 42$

12. Solve for u:
$20u - 8 = 14u + 3$

Excellence: Solving equations with variables on both sides

1. Solve for x: $5x - 8 = 2x + 12$

2. Solve for a: $15 - 2a = 4a + 3$

3. Solve for m: $3m + 12 = 7m$

4. Solve for n: $20 - 5n = 3n + 5$

5. Solve for p: $4p + 15 = 9p - 10$

6. Solve for q: $25 - 3q = 7q +$

7. Solve for r: $6r + 18 = 14r - 22$

8. Solve for s: $30 - 4s = 8s + 6$

9. Solve for t: $7t + 24 = 16t -$

10. Solve for u: $35 - 5u = 10u + 10$

11. Solve for v: $8v + 30 = 20v - 18$

12. Solve for w: $40 - 6w = 12w$

13. Firm A charges 2 dollars per km plus a 5 dollar fee. Firm B charges 3 dollars per km plus a 2 dollar fee. Find the distance k where the costs are equal.

14. A rectangle has length $2x + 5$ and width $x + 3$. Its perimeter is 42 cm. Find x.

15. Sarah is x years old. Her brother is $2x - 5$ years old. Their ages sum to 31. Find x.

16. Four times a number plus 7 equals three times the number plus 15. Find the number.

17. Three consecutive integers sum to 72. Find the integers.

18. One train travels at $5x + 10$ km/h for 2 hours. Another travels at $3x + 20$ km/h for 3 hours. They go the same distance. Find x.

19. Plan A costs 20 dollars plus 0.50 dollars per minute, m. Plan B costs 15 dollars plus 0.75 dollars per minute, m. Find when the costs are equal.

20. A rectangle has length $3x + 4$ and width $x - 2$. Its perimeter is 36 cm. Find x.