



Solving measurement equations

Mana Maths

Te reo Māori terms



whārite

equation

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whakaoti

solve

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taurangi

variable

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Solving measurement equations — Foundation

1. A square has perimeter 20 cm. Solve $4s = 20$.
2. A rectangle has perimeter 18 m and width 4 m. Solve $2l + 8 = 18$.
3. A rectangle has area 24 cm^2 and width 6 cm. Solve $6l = 24$.
4. A triangle has area 15 cm^2 and height 5 cm. Solve $5b = 30$.
5. A cuboid has volume 36 cm^3 , width 3 cm, and height 4 cm. Solve $12l = 36$.
6. Distance is 42 km and speed is 6 km/h. Solve $6t = 42$.
7. Capacity is 2.4 L shared equally into 8 bottles. Solve $8c = 2.4$.
8. A fence uses 30 m of wire around a regular pentagon. Solve $5s = 30$.
9. A rectangle has perimeter 34 cm and length 9 cm. Solve $18 + 2w = 34$.

10. A prism has volume 45 cm^3 and cross-sectional area 9 cm^2 . Solve $9d = 45$.

11. A runner travels 28 km in 4 h. Solve $4v = 28$.

12. A square has area 49 cm^2 . Solve $s^2 = 49$.

13. A jug holds 1500 mL. Solve $1000L = 1500$ for L in litres.

14. A rectangle has area 56 m^2 and length 8 m. Solve $8w = 56$.

Solving measurement equations — Proficient

1. A rectangle has perimeter 26 cm and width 5 cm. Solve $2l + 10 = 26$.
2. A rectangle has perimeter 42 m and length $x + 3$ m, width x m. Solve $2(x + 3) + 2x = 42$.
3. A rectangle has area 63 cm^2 and length $x + 2$ cm, width 7 cm. Solve $7(x + 2) = 63$.
4. A triangle has area 24 m^2 and base 8 m. Solve $8h = 48$.
5. A trapezium has area 40 cm^2 , parallel sides 6 cm and 10 cm. Solve $16h = 80$.
6. A prism has volume 84 cm^3 and cross-sectional area 12 cm^2 . Solve $12d = 84$.
7. A cuboid has volume 90 cm^3 with width 3 cm and height 5 cm. Solve $15l = 90$.
8. Speed is 72 km/h and time is 2.5 h. Solve $2.5d = 180$ for the distance d .
9. A car travels 198 km in 3 h. Solve $3v = 198$.

10. A bottle contains c litres.
Six bottles hold 9 L
altogether. Solve $6c = 9$.

11. A square has area 121
 cm^2 . Solve $s^2 = 121$.

12. A circle has circum-
ference 31.4 cm. Us-
ing $C = 2\pi r$ and $\pi = 3.14$,
solve $6.28r = 31.4$.

Solving measurement equations — Excellence

1. A rectangle has perimeter 54 cm, length $2x + 1$ cm, and width $x + 4$ cm. Solve $2(2x + 1) + 2(x + 4) = 54$.
2. A rectangle has area 96 cm^2 , length $x + 2$ cm, and width $x - 2$ cm. Solve $(x + 2)(x - 2) = 96$.
3. A triangle has area 45 m^2 , base $x + 1$ m, and height 6 m. Solve $3(x + 1) = 45$.
4. A trapezium has area 54 cm^2 , height 6 cm, and parallel sides x cm and $x + 3$ cm. Solve $6x + 9 = 54$.
5. A cuboid has volume 144 cm^3 , width x cm, height 4 cm, and length $x + 2$ cm. Solve $4x(x + 2) = 144$.
6. A prism has volume 150 cm^3 , cross-sectional area $3x \text{ cm}^2$, and length 5 cm. Solve $15x = 150$.
7. A circle has circumference 43.96 cm. Using $\pi = 3.14$, solve $6.28r = 43.96$.
8. A circle has area 78.5 cm^2 . Using $\pi = 3.14$, solve $3.14r^2 = 78.5$.
9. Distance is 252 km. The speed is $x + 6$ km/h and the time is 3 h. Solve $3(x + 6) = 252$.

- 10.** A cyclist rides at 12 km/h for t hours and covers 54 km. Solve $12t = 54$.
- 11.** A tank starts with 18 L and fills at 4 L/min for m minutes. It ends with 50 L. Solve $18 + 4m = 50$.
- 12.** A rectangle has perimeter 70 m and width w m. Its length is $w + 9$ m. Solve $2w + 2(w + 9) = 70$.
- 13.** A square and an equilateral triangle have the same perimeter. The triangle side is 12 cm. Solve $4s = 36$ for the square side s .
- 14.** A cone has volume 100π cm³, radius 5 cm, and height h cm. Solve $\frac{1}{3}\pi r^2 h = 100\pi$.
- 15.** A sphere has volume 288π cm³. Solve $\frac{4}{3}\pi r^3 = 288\pi$.
- 16.** A rectangle has area 72 cm² and width x cm. Its length is $x + 3$ cm. Solve $x(x + 3) = 72$.