

Forming measurement expressions

Write and simplify an algebraic expression for each measurement context.



Name _____

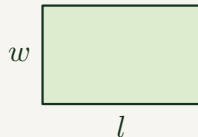
Date _____

How to answer

Choose the correct measurement rule (perimeter, area, volume, or a conversion), write the expression using the given letters, and simplify with brackets where useful. Keep units consistent.

Worked example

Write a simplified expression for the perimeter of a rectangle with length l and width w .

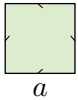


Add all four sides: $P = l + w + l + w$.

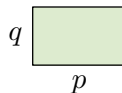
Group like terms: $P = 2l + 2w$.

Factorise: $P = 2(l + w)$.

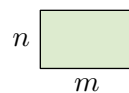
1. Write an expression for the perimeter of a square with side a .



2. Write an expression for the area of a rectangle with length p and width q .



3. Write a simplified expression for the perimeter of a rectangle with length m and width n .



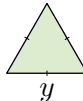
4. Write an expression for the total length of k ribbons, each 12 cm long.

5. Write an expression for the total mass of c boxes, each weighing 5 kg.

6. Write an expression for the total capacity of d bottles, each holding 3 L.

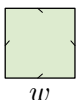
7. Write an expression for the cost of hiring a bike for h hours at \$8 per hour.

8. Write an expression for the perimeter of an equilateral triangle with side y .



9. Write an expression for the distance travelled in t hours at 80 km/h.

10. Write an expression for the area of a square with side w .



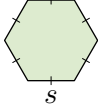
11. Write an expression for the volume of a cube with edge e .

12. Two bags weigh 9 kg and g kg. Write an expression for their total mass.

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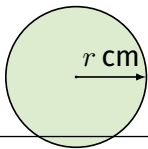
- 13.** Write an expression for the perimeter of a regular hexagon with side s .



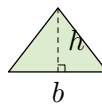
- 14.** r pieces of pipe, each 15 cm, are joined end to end with a 20 cm offset. Write an expression for the total length.

- 15.** Write an expression for the volume of a cuboid with sides l , w , and h .

- 16.** Write an expression for the circumference of a circle with radius r .



- 17.** Write an expression for the area of a triangle with base b and height h .

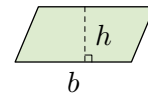


- 18.** Write an expression for the distance travelled at speed v km/h for $2t$ hours.

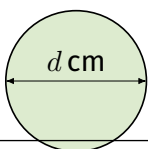
- 19.** A tank holds x L and gains 12 L. Write an expression for the final volume.

- 20.** A plank of length p m is cut into 3 equal pieces. Write an expression for the length of each piece.

- 21.** Write an expression for the area of a parallelogram with base b and height h . Then evaluate it when $b = 5$ and $h = 3$.



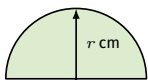
- 22.** Write an expression for the circumference of a circle with diameter d . Then evaluate it to 1 d.p. when $d = 10$ (use $\pi \approx 3.14$).



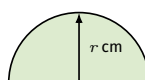
- 23.** Explain the difference between the expression $2\pi r$ and the formula $C = 2\pi r$.

- 24.** q packets each have a mass of 250 g. Write an expression for their total mass in kilograms.

- 25.** Write an expression for the area of a semicircle with radius r .



- 26.** Write an expression for the perimeter of a semicircle with radius r (curved edge plus the straight diameter).



- 27.** A rectangle has length x and width $(x - 2)$. Write simplified, expanded expressions for its perimeter and its area.

