Unit 6 · Geometry Cheat Sheet

Unit 6 focus: area of quadrilaterals, triangles and composite polygons

1 AREA FORMULAS

Figure	Area
Rectangle	A = lw
Parallelogram	A = bh
Triangle	$A = \frac{1}{2}bh$
Trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$

The height is perpendicular to the base.

2 PARALLELOGRAMS

Use the base and the perpendicular height, not the slanted side.

Example: Base 9 cm, height 5 cm, slanted side 6 cm.
A = bh: $9 \cdot 5$

Answer: 45 cm²

3 TRIANGLES

A triangle is half of a parallelogram.

Example: Base 12 in, height 7 in.
Half of bh: $\frac{1}{2} \cdot 12 \cdot 7$

Answer: 42 in²

4 TRAPEZOIDS

Average the two bases, then multiply by the height.

Example: Bases 6 m and 10 m, height 4 m.
Formula: $\frac{1}{2}(6 + 10)(4)$

Answer: 32 m²

5 COMPOSITE FIGURES

Split into rectangles and triangles, then add (or subtract a missing piece).

Example: A 10 × 6 rectangle with a triangle (base 10, height 3) on top.
Rectangle: 60
Triangle: $\frac{1}{2} \cdot 10 \cdot 3 = 15$

Answer: 75 units²

6 QUICK REMINDERS & COMMON MISTAKES

✔ Do remember

- Area is in square units (cm²).
- Volume is in cubic units (cm³).
- Height makes a right angle with the base.

✘ Common mistakes

- Using the slanted side as height: use the perpendicular height
- Forgetting the ½ for triangles: $\frac{1}{2}bh$
- Square units for volume: cubic units

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More practice: volume, polygons on the coordinate plane, nets and surface area

1 VOLUME OF A RECTANGULAR PRISM

$V = lwh$ (works for fractional edges too).

Example: $2\frac{1}{2}$ ft by 4 ft by 3 ft
Multiply: $2.5 \cdot 4 \cdot 3$
Answer: 30 ft³

2 POLYGONS ON THE COORDINATE PLANE

Find side lengths by subtracting coordinates on the same line.

Example: Rectangle with vertices $(-2, 1)$, $(4, 1)$, $(4, 5)$, $(-2, 5)$. Area?
Length: $4 - (-2) = 6$
Width: $5 - 1 = 4$
Answer: 24 units²

3 PERIMETER ON A GRID

Add all side lengths.

Example: Same rectangle: perimeter?
Add: $6 + 4 + 6 + 4$
Answer: 20 units

4 NETS AND SURFACE AREA

Unfold the solid into its faces and add their areas.

Example: Surface area of a $5 \times 3 \times 2$ box.
Pairs of faces: $2(15) + 2(10) + 2(6)$
Answer: 62 units²

5 WHICH MEASURE?

Question	Measure
Fence around a garden	Perimeter
Carpet for a floor	Area
Wrapping paper for a box	Surface area
Water in a tank	Volume

6 CHECK YOURSELF

- Did I use the perpendicular height?
- Did I include every face in the net?
- Are my units squared or cubed correctly?
- Did I split the composite figure without overlapping pieces?