

Chapter 4 | Area of Parallelograms, Triangles, and Trapezoids

Worksheet A | Guided Practice

Name: _____ Grade: _____ Date: _____

Warm-up: Worked Examples

Example 1: Identify the Perpendicular Height

Problem: A triangle has base 14 cm, a slanted side 11 cm, and a perpendicular segment 8 cm. Which is the height?

Meets base at 90°

8 cm = height

Example 2: Area of a Parallelogram

Problem: Base 12 cm, perpendicular height 5 cm.

Multiply

$$12 \times 5 = 60$$

Answer

$$60 \text{ cm}^2$$

Example 3: Area of a Triangle

Problem: Base 16 m, perpendicular height 7 m.

Multiply, then halve

$$(16 \times 7) \div 2 = 56$$

Answer

$$56 \text{ m}^2$$

Example 4: Area of a Trapezoid

Problem: Bases 9 cm and 15 cm, height 6 cm.

Add bases

$$9 + 15 = 24$$

Multiply by height, halve

$$(24 \times 6) \div 2 = 72$$

Answer

$$72 \text{ cm}^2$$

Example 5: Decimal Height

Problem: A parallelogram has base 8 cm and height 3.5 cm.

Multiply

$$8 \times 3.5 = 28$$

Answer

$$28 \text{ cm}^2$$

Example 6: Common-Trap Slanted Side

Problem: A triangle has base 18 cm, perpendicular height 6 cm, and slanted side 10 cm. A student uses 10 cm as the height.

Wrong (slanted side)

10 cm

Correct (perpendicular)

6 cm

Answer

$$(18 \times 6) \div 2 = 54 \text{ cm}^2$$

Practice

1. Parallelogram: $b = 9 \text{ cm}$, $h = 4 \text{ cm}$. Find area.

2. Triangle: $b = 12 \text{ cm}$, $h = 6 \text{ cm}$. Find area.

3. Trapezoid: bases 8 cm and 14 cm , $h = 5 \text{ cm}$. Find area.

4. A triangle has height 7 cm and slanted side 11 cm . Which is the height?

5. Match formula $A = b \times h$ to a shape.

6. Match formula $A = (b \times h) \div 2$ to a shape.

7. Match formula $A = ((b_1 + b_2) \times h) \div 2$ to a shape.

8. Parallelogram: $b = 6 \text{ cm}$, $h = 3 \text{ cm}$.

9. Triangle: $b = 8 \text{ cm}$, $h = 5 \text{ cm}$.

10. Trapezoid: bases 4 cm and 10 cm , $h = 3 \text{ cm}$.

11. Triangle: $b = 16 \text{ m}$, $h = 9 \text{ m}$.

12. Parallelogram: $b = 11 \text{ m}$, $h = 7 \text{ m}$.

13. State the correct unit for an area in centimetres.

14. State the correct unit for an area in metres.

15. Explain why the height must be perpendicular.
