

Chapter 4 | Area of Parallelograms, Triangles, and Trapezoids

Worksheet B | Independent Practice

Name: _____ Grade: _____ Date: _____

Warm-up: Worked Examples

Example 1: Identify the Perpendicular Height

Problem: A triangle has base 20 cm, a slanted side 13 cm, and a perpendicular segment 9 cm. Which is the height?

Meets base at 90°

9 cm = height

Example 2: Area of a Parallelogram

Problem: Base 14 cm, perpendicular height 6 cm.

Multiply

$$14 \times 6 = 84$$

Answer

$$84 \text{ cm}^2$$

Example 3: Area of a Triangle

Problem: Base 18 m, perpendicular height 8 m.

Multiply, then halve

$$(18 \times 8) \div 2 = 72$$

Answer

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

Example 4: Area of a Trapezoid

Problem: Bases 10 cm and 16 cm, height 5 cm.

Add bases

$$10 + 16 = 26$$

Multiply by height, halve

$$(26 \times 5) \div 2 = 65$$

Answer

$$65 \text{ cm}^2$$

Example 5: Decimal Height

Problem: A parallelogram has base 7.5 cm and height 4 cm.

Multiply

$$7.5 \times 4 = 30$$

Answer

$$30 \text{ cm}^2$$

Example 6: Common-Trip Slanted Side

Problem: A triangle has base 20 cm, perpendicular height 7 cm, and slanted side 12 cm. A student uses 12 cm as the height.

Wrong (slanted side)

12 cm

Correct (perpendicular)

7 cm

Answer

$$(20 \times 7) \div 2 = 70 \text{ cm}^2$$

Practice

1. Parallelogram: $b = 8 \text{ cm}$, $h = 7 \text{ cm}$.

2. Triangle: $b = 14 \text{ cm}$, $h = 6 \text{ cm}$.

3. Trapezoid: bases 7 cm and 13 cm , $h = 4 \text{ cm}$.

4. Parallelogram: $b = 13 \text{ m}$, $h = 5 \text{ m}$.

5. Triangle: $b = 18 \text{ m}$, $h = 9 \text{ m}$.

6. Trapezoid: bases 10 m and 16 m , $h = 5 \text{ m}$.

7. Parallelogram: $b = 16 \text{ cm}$, $h = 4.5 \text{ cm}$.

8. Triangle: $b = 11 \text{ cm}$, $h = 8 \text{ cm}$.

9. Trapezoid: bases 9 cm and 15 cm , $h = 8 \text{ cm}$.

10. Parallelogram: $b = 22 \text{ m}$, $h = 3 \text{ m}$.

11. Triangle: $b = 25 \text{ m}$, $h = 4 \text{ m}$.

12. Trapezoid: bases 12 m and 20 m , $h = 6 \text{ m}$.

13. Parallelogram: $b = 7.2 \text{ m}$, $h = 5 \text{ m}$.

14. Triangle: $b = 24 \text{ cm}$, $h = 10 \text{ cm}$, slanted side 13 cm . Find area.

15. Trapezoid: bases 18 cm and 22 cm , $h = 7 \text{ cm}$.
