

Answer Key

Lesson 11.1

Practice Level C

1. 180 square units 2. 288 square units
3. 52 square units 4. 14 cm 5. 6.5 m
6. 32 in. 7. $P = 40$ ft; $A = 60$ ft²
8. $P = 126$ in.; $A = 630$ in.²
9. $P = 154$ cm; $A = 924$ cm²
10. $P = 198$ mm; $A = 1386$ mm²
11. 48 square units 12. 40 square units
13. 20 square units 14. 960 square units
15. 672 square units 16. 474 square units
17. 15; 30 18. 18 cm; 12 cm 19. 16; 64
20. $w = 6$ in.; $P = 40$ in. 21. 6; 150
22. 6; 90 23. 192 square units
24. *Sample answer:* Area of $\triangle JKL = \frac{1}{2}b_1h$;

$$\text{Area of } \triangle JLM = \frac{1}{2}b_2h; \text{ Area of } JKLM =$$

$$\text{Area of } \triangle JKL + \text{Area of } \triangle JLM =$$

$$\frac{1}{2}b_1h + \frac{1}{2}b_2h = \frac{1}{2}h(b_1 + b_2)$$

25. *Sample answer:* Divide the trapezoid into 2 triangles.

$$\text{Area of } \triangle 1 = \frac{1}{2}(6)(4) = 12$$

$$\text{Area of } \triangle 2 = \frac{1}{2}(9)(4) = 18$$

The sum of the areas of both triangles is 30.

Now, use the formula:

$$\text{Area: } \frac{1}{2}h(b_1 + b_2) = \frac{1}{2}(4)(6 + 9) = 30.$$

The areas are equal.

26. First, use Heron's Formula with $s = 4 + 2\sqrt{2}$.

$$A = \sqrt{(4 + 2\sqrt{2})(2\sqrt{2})(2\sqrt{2})(4 - 2\sqrt{2})}$$

$$= \sqrt{(4 + 2\sqrt{2})(4 - 2\sqrt{2})(2\sqrt{2})^2}$$

$$= \sqrt{(16 - 8)(8)} = \sqrt{64} = 8$$

Now use the formula for the area of a triangle.

$$A = \frac{1}{2}bh = \frac{1}{2}(4\sqrt{2})(2\sqrt{2}) = 8.$$

The areas are equal.