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; $A = 60$ ft^2

8. $P = 126$ in.; $A = 630$ in.^{2}

9. $P = 154$ cm; $A = 924$ cm^2

10. $P = 198$ mm; $A = 1386$ mm^2

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 $\triangle JKL = \frac{1}{2}b_1h$;

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

Area of $\triangle JKL +$ 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.

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

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

The sum of the areas of both triangles is 30.

Now, use the formula:

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.