

$a = \frac{1}{2}h(b_1 + b_2)$ height is next to a right angle

10. **ERROR ANALYSIS** Describe and correct the error in finding the area of the trapezoid.

Area = $\frac{1}{2}(6 + 14) = 10 \text{ m}^2$

Correct calculation: $\frac{1}{2}(8)(20) = \frac{1}{2}(160) = 80 \text{ m}^2$

11. Find the area of the trapezoid.

12. Find the area of the trapezoid.

13. Find the area of the trapezoid.

14. **LIGHT** Light shines through a window. What is the area of the trapezoid-shaped region created by the light?

Correct calculation: $a = \frac{1}{2}(4)(3+5) = \frac{1}{2}(4)(8) = \frac{1}{2}(32) = 16 \text{ ft}^2$

Find the area of a trapezoid with height h and bases b_1 and b_2 .

15. $h = 6$ in. $b_1 = 9$ in. $b_2 = 11$ in.

16. $h = 22$ cm. $b_1 = 10.5$ cm. $b_2 = 12.5$ cm.

17. $h = 12$ mi. $b_1 = 5.6$ mi. $b_2 = 7.4$ mi.

18. $h = 14$ m. $b_1 = 21$ m. $b_2 = 22$ m.

19. **REASONING** The rectangle and the trapezoid have the same area. What is the length ℓ of the rectangle?

Correct calculation: $\frac{1}{2}(9)(24+12) = \frac{1}{2}(9)(36) = \frac{1}{2}(324) = 162 \text{ ft}^2$

20. **OPEN-ENDED** The area of the trapezoid-shaped student union sign is 5 square feet. Find two possible values for each base length.

21. **AUDIO** How many times greater is the area of the floor covered by the larger speaker than by the smaller speaker?

Correct calculation: $\frac{1}{2}(2h)(2b_2) = \frac{1}{2}(4hb_2) = 2hb_2$



PRACTICE

Find the area of the shaded figure.

1. $3 \times 6 = 18$

2. $4 \times 6 = 24$

3. $4 \times 4 = 16$

Find the area of the figure.

4. $12 \times 10 = 120$

5. $11 \times 16 = 176$

6. $\frac{1}{2}(10)(4) + 10 \times 6 = 20 + 60 = 80$

7. **ANOTHER METHOD** Find the area in Example 2 using a different method.

Extension 4.3 Areas of Composite Figures

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