

8.4 Area of Trapezoids

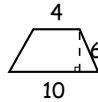
Chapter 8: Geometry and Measurement

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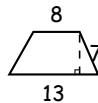
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Problem 8.49 A trapezoid has bases 4 and 10 and perpendicular height 6. Find its area.



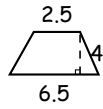
Problem 8.50 A trapezoid has bases 8 and 13 and perpendicular height 7. Find its area.



8.4 Area of Trapezoids

Chapter 8: Geometry and Measurement

Problem 8.51 A trapezoid has bases 2.5 and 6.5 and perpendicular height 4. Find its area.



Problem 8.53 A trapezoid has area 60 and bases 8 and 12. Find its perpendicular height.

Problem 8.54 A trapezoid has area 54, perpendicular height 6, and one base 7. Find the other base.

Problem 8.52 A trapezoid has bases $\frac{3}{2}$ and $\frac{9}{2}$ and perpendicular height 5. Find its area.

8.4 Area of Trapezoids

Chapter 8: Geometry and Measurement

Problem 8.55 Explain the phrase “height times average base.”

Problem 8.58 One base has length 0. What familiar formula results?

Problem 8.56 A trapezoid has bases 9 and 15. Between which two rectangle areas must its area lie if height is 4?

Problem 8.59 The height doubles while both bases stay fixed. How does area change?

Problem 8.57 The two bases are equal. What familiar formula results?

Problem 8.60 Both bases double while height stays fixed. How does area change?

8.4 Area of Trapezoids

Chapter 8: Geometry and Measurement

Problem 8.61 A trapezoid has area 105, height 7, and bases differing by 8. Find the two integer bases.

Problem 8.63 A trapezoid has bases in ratio 2 : 5, height 8, and area 112. Find the bases.

Problem 8.62 A trapezoid and rectangle have equal height 6 and equal area 72. The trapezoid's bases are 8 and 16. Find the rectangle's width and explain the connection.

Problem 8.64 A trapezoid's shorter base increases by 4 and longer base decreases by 4. Explain why area stays unchanged if height is fixed.