

Ch 10:1 -

10.3

Quiz

Review

(Mid-Chapter Review)

Do you know HOW?

Use the triangle at the right. Find the missing side length. If necessary, round to the nearest tenth.



- 1. $a = 20, b = 25$
- 2. $a = 0.8, b = 1.5$
- 3. $a = 5, b = 12$
- 4. $a = 2.2, b = 12$
- 5. $a = 14, c = 50$
- 6. $a = 9, c = 41$
- 7. $b = 40, c = 41$
- 8. $b = 36, c = 39$

Determine whether the given lengths can be side lengths of a right triangle.

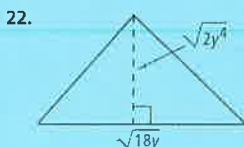
- 9. 8, 15, 17
- 10. 5, 24, 25
- 11. 60, 80, 100

Simplify each radical expression.

- 12. $\sqrt{80}$
- 13. $\sqrt{10} \cdot \sqrt{18}$
- 14. $\sqrt{6x} \cdot \sqrt{2x}$
- 15. $-2\sqrt{3b^2} \cdot \sqrt{12b}$
- 16. $\sqrt{\frac{64}{81}}$
- 17. $-\frac{\sqrt{5c}}{\sqrt{45c^3}}$
- 18. $\frac{-3\sqrt{14x^3}}{-\sqrt{21x}}$
- 19. $\frac{\sqrt{13f^3}}{\sqrt{5f^2}}$

20. **Sports** A rectangular soccer field is $6w$ yards wide and $10w$ yards long. What is an expression for the distance from one corner to the opposite corner?

Find the area of each figure.



Simplify each radical expression.

- 23. $5\sqrt{5} + 3\sqrt{5}$
- 24. $2\sqrt{28} - 3\sqrt{7}$
- 25. $\sqrt{3}(\sqrt{6} - 4)$
- 26. $(2\sqrt{21} + 4\sqrt{3})(5\sqrt{21} - \sqrt{3})$
- 27. $\frac{1}{\sqrt{3} - 2}$
- 28. $\frac{3 + \sqrt{2}}{4\sqrt{2} + 2}$

Find the exact solution for each equation. Find the approximate solution to the nearest tenth.

- 29. $\frac{5}{\sqrt{8} - 2} = \frac{\sqrt{8} + 2}{x}$
- 30. $\frac{x}{\sqrt{10}} = \frac{3\sqrt{2}}{\sqrt{2} + 1}$

31. **Transportation** A bus leaves the bus station and drives 3.75 mi east. The bus then turns and drives 5 mi south. How far is the bus from the bus station?

Do you UNDERSTAND?

- 32. What type of angle is formed by the two legs of a right triangle?
- 33. **Writing** How do you use a conjugate to simplify a fraction with a radical expression in its denominator?
- 34. **Reasoning** Is the equation $\sqrt{a} + \sqrt{b} = \sqrt{a+b}$ always, sometimes, or never true? Justify your answer.
- 35. **Error Analysis** Describe and correct the error shown below in simplifying the radical expression.

$$\begin{aligned} \sqrt{45} &= \sqrt{9 \cdot 5} \\ &= 9\sqrt{5} \end{aligned}$$

36. **Open-Ended** Give the side lengths of a triangle that is not a right triangle. Explain why these lengths cannot be the side lengths of a right triangle.

Answers

Mid-Chapter Quiz

- 1. 32.0
- 2. 1.7
- 3. 13
- 4. 12.2
- 5. 48
- 6. 40
- 7. 9
- 8. 15
- 9. yes
- 10. no
- 11. yes
- 12. $4\sqrt{5}$
- 13. $6\sqrt{5}$
- 14. $2x\sqrt{3}$
- 15. $-12b\sqrt{b}$
- 16. $\frac{8}{9}$
- 17. $-\frac{1}{3c}$
- 18. $x\sqrt{6}$
- 19. $\frac{\sqrt{65t}}{5}$
- 20. $2w\sqrt{34}$
- 21. $2x\sqrt{3}$
- 22. $3y^2\sqrt{y}$
- 23. $8\sqrt{5}$
- 24. $\sqrt{7}$
- 25. $3\sqrt{2} - 4\sqrt{3}$
- 26. $198 + 54\sqrt{7}$
- 27. $-\sqrt{3} - 2$
- 28. $\frac{5\sqrt{2} + 1}{14}$
- 29. $\frac{4}{5}; 0.8$
- 30. $6\sqrt{10} - 6\sqrt{5}; 5.6$
- 31. 6.25 mi
- 32. right angle

- 33. To simplify a fraction with a radical expression in its denominator, you multiply the numerator and the denominator by the conjugate of the denominator. The product of the conjugates in the denominator is a difference of squares, so the radicals are removed from the denominator.
- 34. Sometimes; explanations may vary. Sample:
 $\sqrt{1} + \sqrt{0} = \sqrt{1}$, but
 $\sqrt{1} + \sqrt{4} \neq \sqrt{5}$.
- 35. $\sqrt{9 \cdot 5} \neq 9\sqrt{5}$;
 $\sqrt{9 \cdot 5} = \sqrt{9} \cdot \sqrt{5} = 3\sqrt{5}$
- 36. Answers may vary. Sample: 3, 4, 6; the side lengths do not satisfy $a^2 + b^2 = c^2$.

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are students for the Chapter Quiz and after Test with online practice and review.