Algebra 1 Chapter 11 Review Spring 2015

Simplify each radical expression.

1. $\sqrt{52}$ 2. $\sqrt{176}$ 3. $\sqrt{320}$ 4. $\sqrt{150}$ 5. $\sqrt{w^7}$ 6. $\sqrt{R^{10}}$ 7. $\sqrt{54k^{16}j^{13}}$

8. $\sqrt{\frac{13}{64}}$ 9. $\sqrt{\frac{98c^3}{50c^{11}}}$ 10. $\frac{\sqrt{5a^7}}{\sqrt{125a}}$ 11. $\sqrt{3b^5} \cdot \sqrt{27b^{13}}$ 12. $\sqrt{36k^3} \cdot \sqrt{20k^6}$

13. $12\sqrt{6} - 6\sqrt{5} + 9\sqrt{5} - \sqrt{6}$ 14. $\sqrt{8} + 5\sqrt{12} - 7\sqrt{75} + \sqrt{18}$ 15. $\sqrt{6}(7\sqrt{5} - 2\sqrt{6})$

16. $5\sqrt{2}(4\sqrt{2} + 8\sqrt{3})$ 17. $\sqrt{10}(3\sqrt{2} + 4\sqrt{5})$ 18. $(8 + \sqrt{3})(4 - 5\sqrt{3})$

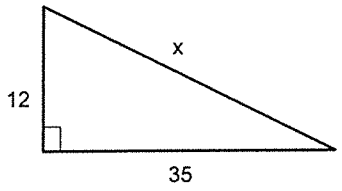
19. $(\sqrt{2} + 3\sqrt{7})(9\sqrt{2} - 4\sqrt{7})$ 20. $(3 + 2\sqrt{5})^2$ 21. $(6 + \sqrt{13})(6 - \sqrt{13})$

22. $(\sqrt{15} + 2\sqrt{3})(\sqrt{15} - 2\sqrt{3})$

Rationalize the denominator. 23. $\frac{16}{\sqrt{5}}$ 24. $\frac{20cd^5}{\sqrt{6c^3d}}$ 25. $\frac{8}{\sqrt{10a}}$

Find each missing side using the Pythagorean Theorem. Round to the nearest hundredth when needed.

28.



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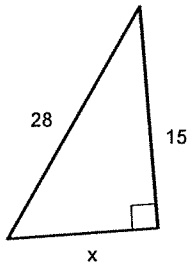

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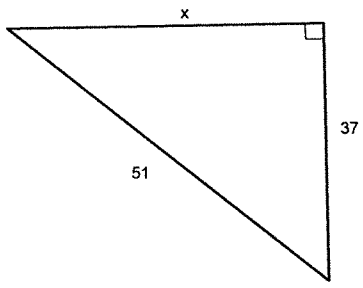


Are each group of three lengths sides of a right triangle?

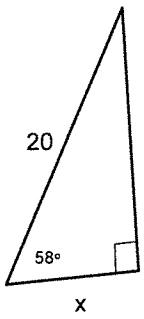
31. $9, 15, 17$ 32. $18, 80, 82$ 33. $16, 63, 65$

Find the third number in each Pythagorean Triple.

34. $18, 24, \_\_\_\_$ 35. $36, 85, \_\_\_\_$

Find the missing side in each triangle using one of the trigonometric ratios. Round to the nearest hundredth.

40.



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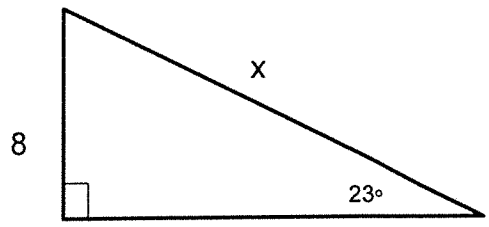

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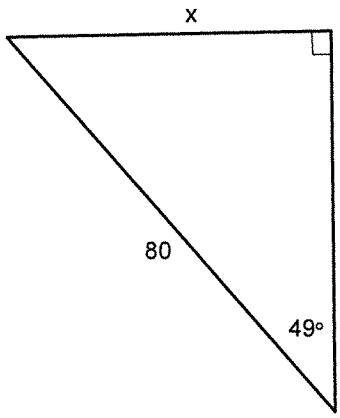
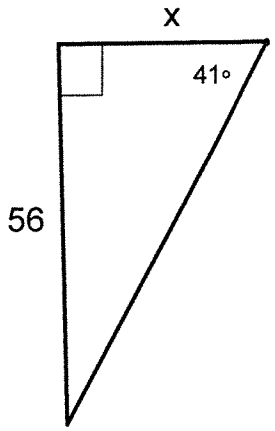
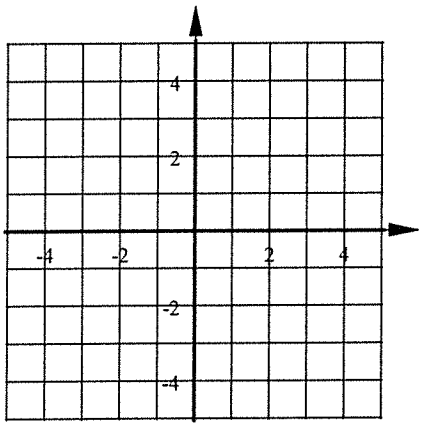


43.



44. Use the distance formula to find the length of $\overline{MN}$. Round to the nearest hundredth.
$M(6,13)$ $N(-9,21)$

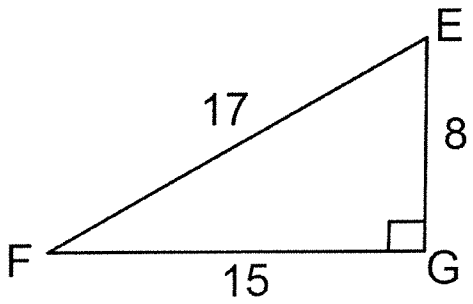
45. Find the perimeter of $\triangle ABC$. Round to the nearest hundredth.
$A(-3,-2)$ $B(4,-2)$ $C(1,3)$



46. Find the midpoint of each segment using the given coordinates.
a) $\overline{AB}$: $A(8,-3), B(2,-12)$ b) $\overline{CD}$: $C(-4,6), D(-4,19)$

47. The midpoint of $\overline{EF}$ is $Q(11,-3)$. The coordinates of pt. E are $(4,5)$. Find the coordinates of Pt. F.

48. Use $\triangle EFG$ to find each trig ratio as a fraction.
a) CosE b) Sin F c) Tan E d) Sin E e) Tan F f) Cos F



Algebra 1 Chapter 11 Review Spring 2015 ANSWERS

1. $2\sqrt{13}$ 2. $4\sqrt{11}$ 3. $8\sqrt{5}$ 4. $5\sqrt{6}$ 5. $w^3\sqrt{w}$

6. R^5 7. $3k^8j^6\sqrt{6j}$ 8. $\frac{\sqrt{13}}{8}$ 9. $\frac{7}{5c^4}$ 10. $\frac{a^3}{5}$

11. $9b^9$ 12. $12k^4\sqrt{5k}$ 13. $11\sqrt{6}+3\sqrt{5}$ 14. $5\sqrt{2}-25\sqrt{3}$ 15. $7\sqrt{30}-12$

16. $40+40\sqrt{6}$ 17. $6\sqrt{5}+20\sqrt{2}$ 18. $17-36\sqrt{3}$ 19. $-66+23\sqrt{14}$

20. $29+12\sqrt{5}$ 21. 23 22. 3 23. $\frac{16\sqrt{5}}{5}$ 24. $\frac{10d^4\sqrt{6cd}}{3c}$

25. $\frac{4\sqrt{10a}}{5a}$ 28. $x=37$

29. $x=23.64$ 30. $x=35.10$ 31. *NO* 32. *Yes* 33. *Yes*

34. 30 35. 77 40. $x=10.60$ 41. $x=20.47$ 42. $x=60.38$

43. $x=64.42$ 44. $MN=17$ 45. Perimeter of $\triangle ABC=19.23$

46. a) midpoint: $(5,-7.5)$ b) midpoing: $(-4,12.5)$

47. $F(18,-11)$

48. a) $\frac{8}{17}$ b) $\frac{8}{17}$ c) $\frac{15}{8}$ d) $\frac{15}{17}$ e) $\frac{8}{15}$ f) $\frac{15}{17}$