Exploratory Exercises

Simplify. Use absolute value symbols when necessary.

1. $\sqrt{8}$ 2. $\sqrt{12}$ 3. $\sqrt{20}$ 4. $\sqrt{18}$ 5. $\sqrt{24}$ 6. $\sqrt{32}$

7. $\sqrt{48}$ 8. $\sqrt{19}$ 9. $\sqrt{m^2}$ 10. $\sqrt{y^6}$ 11. $\sqrt{x^5}$ 12. $\sqrt{a^3}$

13. $\sqrt{8a^3}$ 14. $\sqrt{9a^4}$ 15. $\sqrt{a^3b^3}$ 16. $\sqrt{x^4y^4}$ 17. $\sqrt{4} \cdot \sqrt{9}$ 18. $\sqrt{8} \cdot \sqrt{3}$

19. $\sqrt{5} \cdot \sqrt{10}$ 20. $\sqrt{6} \cdot \sqrt{9}$ 21. $\sqrt{11} \cdot \sqrt{11}$ 22. $\sqrt{10} \cdot \sqrt{10}$

23. $\sqrt{3}(\sqrt{3} + \sqrt{2})$ 24. $\sqrt{5}(\sqrt{3} + \sqrt{5})$ 25. $\sqrt{7}(\sqrt{5} - \sqrt{7})$ 26. $\sqrt{10}(\sqrt{10} - \sqrt{3})$

Written Exercises

Simplify. Use absolute value symbols when necessary.

27. $\sqrt{27}$ 28. $\sqrt{75}$ 29. $\sqrt{45}$ 30. $\sqrt{58}$

31. $\sqrt{72}$ 32. $\sqrt{80}$ 33. $\sqrt{90}$ 34. $\sqrt{98}$

35. $\sqrt{128}$ 36. $\sqrt{280}$ 37. $\sqrt{500}$ 38. $\sqrt{1000}$

39. $\sqrt{720}$ 40. $\sqrt{784}$ 41. $\sqrt{5184}$ 42. $\sqrt{2916}$

43. $\sqrt{32x^2}$ 44. $\sqrt{20a^2}$ 45. $\sqrt{40b^4}$ 46. $\sqrt{48m^4}$

47. $\sqrt{36a^2b^2}$ 48. $\sqrt{80a^2b^3}$ 49. $\sqrt{120a^3b}$ 50. $\sqrt{44m^4n}$

51. $\sqrt{60x^2y^4}$ 52. $\sqrt{54a^2b^2}$ 53. $\sqrt{20m^2n^7}$ 54. $\sqrt{147x^5y^4}$

55. $\sqrt{320m^4n^6}$ 56. $\sqrt{88x^{10}y^{10}}$ 57. $\sqrt{21x^2y}$ 58. $\sqrt{42xy}$

59. $\sqrt{6} \cdot \sqrt{8}$ 60. $\sqrt{10} \cdot \sqrt{30}$ 61. $2\sqrt{5} \cdot \sqrt{5}$ 62. $4\sqrt{2} \cdot \sqrt{2}$

63. $2\sqrt{3} \cdot 7\sqrt{5}$ 64. $3\sqrt{7} \cdot 6\sqrt{2}$ 65. $5\sqrt{10} \cdot 3\sqrt{10}$ 66. $6\sqrt{8} \cdot 7\sqrt{8}$

67. $4\sqrt{5} \cdot 3\sqrt{15}$ 68. $7\sqrt{30} \cdot 2\sqrt{6}$ 69. $\sqrt{3}(\sqrt{3} + \sqrt{6})$ 70. $\sqrt{7}(\sqrt{14} + \sqrt{7})$

71. $\sqrt{6}(\sqrt{7} - \sqrt{3})$ 72. $\sqrt{2}(\sqrt{8} - \sqrt{4})$ 73. $\sqrt{5}(\sqrt{10} - \sqrt{2})$ 74. $\sqrt{10}(\sqrt{10} - \sqrt{2})$

75. $\sqrt{3}(\sqrt{5} + \sqrt{27})$ 76. $\sqrt{5}(\sqrt{3} + \sqrt{125})$ 77. $\sqrt{3}(2\sqrt{12} + 4\sqrt{7})$ 78. $\sqrt{8}(2\sqrt{3} + 5\sqrt{6})$

79. Find the area of a rectangle whose length is $\sqrt{343}$ cm and whose width is $\sqrt{7}$ cm.

80. Find the area of a triangle whose base is $\sqrt{6}$ in. and whose altitude is $2\sqrt{6}$ in.