

Simplify these radicals. (Try not to use a calculator, these are all roots of perfect squares)

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|------------------------|------------------------|------------------------|------------------------|
| 1. $\sqrt{49}$ _____ | 2. $\sqrt{64}$ _____ | 3. $\sqrt{169}$ _____ | 4. $\sqrt{81}$ _____ |
| 5. $\sqrt{25}$ _____ | 6. $\sqrt{144}$ _____ | 7. $\sqrt{36}$ _____ | 8. $\sqrt{4}$ _____ |
| 9. $\sqrt{121}$ _____ | 10. $\sqrt{9}$ _____ | 11. $\sqrt{225}$ _____ | 12. $\sqrt{1}$ _____ |
| 13. $\sqrt{16}$ _____ | 14. $\sqrt{100}$ _____ | 15. $\sqrt{169}$ _____ | 16. $\sqrt{625}$ _____ |
| 17. $\sqrt{196}$ _____ | 18. $\sqrt{256}$ _____ | | |

Simplify these radicals. Leave your answer in radical form:

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|------------------|-----------------|-----------------|------------------|
| 25. $\sqrt{12}$ | 26. $\sqrt{45}$ | 27. $\sqrt{8}$ | 28. $\sqrt{50}$ |
| 29. $\sqrt{28}$ | 30. $\sqrt{18}$ | 31. $\sqrt{20}$ | 32. $\sqrt{44}$ |
| 33. $\sqrt{24}$ | 34. $\sqrt{32}$ | 35. $\sqrt{30}$ | 36. $\sqrt{54}$ |
| 37. $\sqrt{500}$ | 38. $\sqrt{72}$ | 39. $\sqrt{98}$ | 40. $\sqrt{125}$ |

45. $-4\sqrt{36}$

46. $7\sqrt{12}$

47. $2\sqrt{100}$

48. $7\sqrt{18}$

49. $9\sqrt{32}$

50. $6\sqrt{200}$

51. $-3\sqrt{8}$

52. $9\sqrt{32}$

53. $(\sqrt{36})^2$

54. $(\sqrt{81})^2$

55. $(\sqrt{49})^2$

56. $(\sqrt{16})^2$

57. $(3\sqrt{25})^2$

58. $(7\sqrt{64})^2$

59. $(7\sqrt{9})^2$

60. $(3\sqrt{100})^2$

61. $(5\sqrt{2})^2$

62. $(3\sqrt{7})^2$

63. $(2\sqrt{11})^2$

64. $(8\sqrt{15})^2$

Estimate the value of each radical by naming the whole numbers each radical is between.

19. $\underline{\hspace{1cm}} < \sqrt{10} < \underline{\hspace{1cm}}$

20. $\underline{\hspace{1cm}} < \sqrt{53} < \underline{\hspace{1cm}}$

21. $\underline{\hspace{1cm}} < \sqrt{14} < \underline{\hspace{1cm}}$

22. $\underline{\hspace{1cm}} < \sqrt{131} < \underline{\hspace{1cm}}$

23. $\underline{\hspace{1cm}} < \sqrt{97} < \underline{\hspace{1cm}}$

24. $\underline{\hspace{1cm}} < \sqrt{21} < \underline{\hspace{1cm}}$