

1. $\sqrt{48} = ?$
 A) $3\sqrt{3}$ B) $4\sqrt{3}$ C) $5\sqrt{3}$
 D) $3\sqrt{5}$ E) $8\sqrt{3}$
2. $\sqrt{45} - \sqrt{5} = ?$
 A) $2\sqrt{5}$ B) $\sqrt{10}$ C) $\sqrt{5}$
 D) $2\sqrt{10}$ E) $3\sqrt{5}$
3. $\sqrt{44} - \sqrt{11} = ?$
 A) $\sqrt{11}$ B) $2\sqrt{11}$ C) $-\sqrt{11}$
 D) $-2\sqrt{11}$ E) $3\sqrt{11}$
4. Which one of the followings is not equal to $\sqrt{3}$?
 A) $\frac{3}{\sqrt{3}}$ B) $\frac{\sqrt{12}}{2}$ C) $\frac{\sqrt{6}}{3}$ D) $\frac{\sqrt{75}}{5}$ E) $\frac{\sqrt{54}}{3\sqrt{2}}$
5. $\sqrt{1} + \sqrt[3]{-1} + \sqrt[4]{16} = ?$
 A) 4 B) 3 C) 2 D) 1 E) 0
6. Which of the following is the largest?
 A) $2\sqrt{5}$ B) $3\sqrt{3}$ C) $4\sqrt{2}$ D) $\sqrt{33}$ E) 5
7. $\sqrt[3]{-1} - \sqrt[3]{-8} - \sqrt[3]{-125} - \sqrt[3]{-64} = ?$
 A) 9 B) 10 C) 11 D) 12 E) 13
8. $\sqrt{98} + 5\sqrt{8} - \sqrt{72} + 4\sqrt{50} = ?$
 A) 31 B) $31\sqrt{2}$ C) $37\sqrt{2}$ D) 37 E) $25\sqrt{2}$
9. $\sqrt{6.4} \cdot \sqrt{22.5} = ?$
 A) 8 B) 9 C) 10 D) 12 E) 15
10. $\sqrt[3]{54} + \sqrt[3]{16} - \sqrt[3]{250} = ?$
 A) $-\sqrt[3]{2}$ B) $-2\sqrt[3]{2}$ C) $\sqrt[3]{2}$
 D) $2\sqrt[3]{2}$ E) 0
11. $\sqrt{72} - \sqrt{18} + 2\sqrt{50} + 3\sqrt{8} - 3\sqrt{128} = ?$
 A) $4\sqrt{2}$ B) $-13\sqrt{2}$ C) $7\sqrt{2}$
 D) $-5\sqrt{2}$ E) $10\sqrt{2}$

12. $\sqrt{\frac{3}{2}} + \sqrt{\frac{2}{3}} + \sqrt{\frac{1}{6}} = ?$
 A) $2\sqrt{6}$ B) $\sqrt{6}$ C) $\frac{\sqrt{6}}{2}$ D) 1 E) $\frac{1}{\sqrt{6}}$
13. $\sqrt{20} - \frac{\sqrt{45}}{3} - \frac{\sqrt{80}}{4} = ?$
 A) $\sqrt{5}$ B) $2\sqrt{5}$ C) $3\sqrt{5}$ D) $4\sqrt{5}$ E) 0
14. $\frac{\sqrt{98}}{14} - \frac{5\sqrt{8}}{10} + \frac{1}{\sqrt{2}}$
 A) 0 B) $\sqrt{2}$ C) $2\sqrt{2}$
 D) $-\sqrt{2}$ E) $-2\sqrt{2}$
15. $\sqrt{2a^5b^3c^2} + \sqrt{8abc^2} = ?$
 A) $\frac{a^4b^2}{\sqrt{2}}$ B) $\frac{a^4b^2}{2}$ C) $\frac{a^2b}{2}$
 D) $\frac{a^2b}{\sqrt{2}}$ E) $\frac{a^2b}{4}$
16. $\sqrt{0.01} - \sqrt{1.21} + \sqrt{0.2 \cdot \sqrt{0.04}} = ?$
 A) $-\frac{4}{5}$ B) $\frac{4}{7}$ C) $-\frac{2}{9}$ D) $\frac{3}{4}$ E) $-\frac{1}{6}$
17. $\frac{3\sqrt{24} - 2\sqrt{18}}{-\sqrt{2}} = ?$
 A) $6(\sqrt{2} + \sqrt{6})$ B) $6(\sqrt{6} - \sqrt{2})$ C) $\sqrt{6}$
 D) $12(2 - \sqrt{3})$ E) $6(1 - \sqrt{3})$
18. $\frac{3}{3 + \sqrt{3}} + \frac{3}{2\sqrt{3}} = ?$
 A) 2 B) 3 C) $\frac{3}{2}$ D) $\frac{2}{3}$ E) $\frac{4}{3}$
19. If $\sqrt{0.1} + \sqrt{1.6} + \sqrt{12.1} = a \cdot \sqrt{10}$, then $a = ?$
 A) 16 B) $\frac{69}{5}$ C) $\frac{8}{5}$ D) $\frac{5}{8}$ E) $\frac{4}{25}$

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