



Topic 2: Irrational Numbers

Questions 1 – 6 Estimate the square root expression.

1. The value of $\sqrt{51}$ is between ___ and ___.
2. The value of $\sqrt{98}$ is between ___ and ___.
3. The value of $\sqrt{50} + \sqrt{82}$ is between ___ and ___.
4. The value of $\sqrt{15} - \sqrt{26}$ is between ___ and ___.
5. The value of $\sqrt{14} \cdot \sqrt{2}$ is between ___ and ___.
6. The value of $\sqrt{7} \cdot \sqrt{9}$ is between ___ and ___.

Questions 7 – 17 Simplify the radical expression.

7. $\sqrt{45}$
8. $\sqrt{24}$
9. $\sqrt{2} \cdot \sqrt{11}$
10. $\sqrt{3} \cdot \sqrt{27}$
11. $\sqrt{20} \cdot \sqrt{25}$
12. $\sqrt{\frac{64}{4}}$
13. $\sqrt{11} + \sqrt{11} + \sqrt{11} + \sqrt{11} + \sqrt{11}$
14. $\sqrt{5} - 7\sqrt{5}$
15. $\sqrt{128} + \sqrt{2}$
16. $\sqrt{m^2n} \cdot \sqrt{n}$
17. $\sqrt{t} \cdot \sqrt{t} \cdot \sqrt{t} \cdot \sqrt{t} - \sqrt{t} \cdot \sqrt{t}$



Questions 18 – 26 Choose the expression that is equivalent to the given radical expression?

18. $\frac{2}{\sqrt{16}}$ is equivalent to...

(a) $\frac{1}{\sqrt{6}}$

(b) $\frac{1}{\sqrt{4}}$

(c) $\frac{2}{\sqrt{4}}$

(d) $\frac{1}{\sqrt{2}}$

19. $\frac{\sqrt{128}}{4}$ is equivalent to...

(a) $\sqrt{8}$

(b) $\frac{8}{2}$

(c) $\sqrt{28}$

(d) $\sqrt{2}$

20. $\frac{\sqrt{98}}{7}$ is equivalent to...

(a) $\sqrt{91}$

(b) $\sqrt{2}$

(c) $\sqrt{14}$

(d) $\frac{14}{2}$



21. $\frac{\sqrt{44} - \sqrt{11}}{\sqrt{22}}$ is equivalent to...

(a) 1

(b) $\frac{\sqrt{11}}{2}$

(c) $\frac{\sqrt{22}}{11}$

(d) $\frac{1}{\sqrt{2}}$

22. $\frac{\sqrt{3 \cdot 6}}{\sqrt{6}} \cdot \frac{\sqrt{6^2}}{\sqrt{9 \cdot 6^2}}$ is equivalent to...

(a) $\frac{\sqrt{6}}{3}$

(b) $\frac{6}{\sqrt{18}}$

(c) $\frac{1}{\sqrt{3}}$

(d) 1

23. $\frac{\sqrt{a^3 b}}{a}$ is equivalent to...

(a) \sqrt{b}

(b) $\sqrt{ab^2}$

(c) \sqrt{ab}

(d) $\frac{ab}{2}$



24. $\frac{c}{\sqrt{c^2t}}$ is equivalent to...

(a) $\frac{1}{\sqrt{t}}$

(b) $\frac{2}{ct}$

(c) $\frac{1}{\sqrt{ct^2}}$

(d) $\frac{1}{\sqrt{ct}}$

25. $\frac{\sqrt{g}}{\sqrt{2g}} \cdot \frac{2g^4}{\sqrt{g^2}}$ is equivalent to...

(a) $\sqrt{2}g^3$

(b) 1

(c) $\frac{\sqrt{2g}}{g}$

(d) $\frac{2}{\sqrt{g}}$

26. $\frac{\sqrt{x} + \sqrt{x}}{\sqrt{x+x}}$ is equivalent to...

(a) $\frac{\sqrt{x}}{2}$

(b) $\sqrt{2}$

(c) 1

(d) $\frac{\sqrt{2x}}{x}$