

## Exercises [A-1]

Simplify:

1.  $\sqrt{12}$
2.  $\sqrt{32}$
3.  $\sqrt{24}$
4.  $\sqrt{36}$
5.  $\sqrt{48}$
6.  $\sqrt{54}$
7.  $\sqrt{68}$
8.  $\sqrt{76}$
9.  $\sqrt{84}$
10.  $\sqrt{250}$

11.  $\sqrt{16a}$
12.  $\sqrt{98}$
13.  $15\sqrt{18}$
14.  $12\sqrt{32}$
15.  $2\sqrt{200}$
16.  $6\sqrt{50}$
17.  $\sqrt{\frac{44}{2}}$
18.  $\sqrt{196}$
19.  $\sqrt{50m^3n}$
20.  $\sqrt{450}$
21.  $\frac{2}{5}\sqrt{45}$
22.  $\sqrt{8a^2}$
23.  $\sqrt{90m^5}$
24.  $\sqrt{120a^2b^3}$
25.  $\sqrt{\frac{16}{25}}$
26.  $\sqrt{\frac{7}{9}}$
27.  $\frac{1}{2} \cdot \sqrt{\frac{5}{16}}$
28.  $5 \cdot \sqrt{\frac{24}{25}}$
29.  $14 \cdot \sqrt{\frac{8}{49}}$

## Exercises [A-2]

Simplify:

1.  $\sqrt{8}$
2.  $\sqrt{20}$
3.  $\sqrt{28}$
4.  $\sqrt{44}$
5.  $\sqrt{52}$
6.  $\sqrt{64r^4}$
7.  $\sqrt{72}$
8.  $\sqrt{80}$
9.  $\sqrt{125}$
10.  $\sqrt{75x}$
11.  $\sqrt{18b^2}$
12.  $5\sqrt{8}$
13.  $6\sqrt{25}$
14.  $8\sqrt{27}$
15.  $4\sqrt{4}$
16.  $10\sqrt{99}$
17.  $\frac{1}{6}\sqrt{300}$
18.  $\sqrt{40c^3}$
19.  $\sqrt{60a^4b}$
20.  $\sqrt{128}$
21.  $\sqrt{27x^3}$
22.  $\sqrt{88ab^3}$
23.  $\sqrt{289a^2}$
24.  $\sqrt{x^3}$
25.  $\sqrt{\frac{3}{4}}$
26.  $\sqrt{\frac{4}{81}}$
27.  $\sqrt{\frac{49}{9}}$

## Exercises [B]

Simplify:

1.  $\sqrt{724}$
2.  $\sqrt{529}$
3.  $\sqrt{816}$
4.  $\sqrt{162}$
5.  $\sqrt{\frac{40}{4}}$
6.  $\sqrt{4y^3}$
7.  $\sqrt{\frac{20}{9}}$
8.  $\sqrt{\frac{32}{49}}$
9.  $\sqrt{\frac{200}{16}}$
10.  $\sqrt{\frac{98}{36}}$
11.  $8\sqrt{\frac{5}{64}}$
12.  $\sqrt{75b^4}$
13.  $\sqrt{2x^2 + 4x + 2}$
14.  $\sqrt{3(a-1)^2}$
15.  $\sqrt{5a^2 - 30ab + 45b^2}$
16.  $\sqrt{(p-q)(p+q)^2}$

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|-----------------|------------------|---------------------------|---------------------------|
| 1. $2\sqrt{3}$  | 9. $2\sqrt{21}$  | 17. $\sqrt{22}$           | 24. $2ab\sqrt{30b}$       |
| 2. $4\sqrt{2}$  | 10. $5\sqrt{10}$ | 18. 14                    | 25. $\frac{4}{5}$         |
| 3. $2\sqrt{6}$  | 11. $4\sqrt{a}$  | 19. $5m\sqrt{2mn}$        | 26. $\frac{1}{3}\sqrt{7}$ |
| 4. 6            | 12. $7\sqrt{2}$  | 20. $15\sqrt{2}$          | 27. $\frac{1}{8}\sqrt{5}$ |
| 5. $4\sqrt{3}$  | 13. $45\sqrt{2}$ | 21. $\frac{5}{5}\sqrt{5}$ | 28. $2\sqrt{5}$           |
| 6. $3\sqrt{6}$  | 14. $48\sqrt{2}$ | 22. $2a\sqrt{2}$          | 29. $4\sqrt{2}$           |
| 7. $2\sqrt{17}$ | 15. $20\sqrt{2}$ | 23. $3m^2\sqrt{10m}$      |                           |
| 8. $2\sqrt{19}$ | 16. $30\sqrt{2}$ |                           |                           |

80 - Answers to Problems in Text

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|-----------------|------------------|---------------------------|---------------------------|
| 1. $2\sqrt{2}$  | 8. $4\sqrt{5}$   | 15. 8                     | 22. $2b\sqrt{22ab}$       |
| 2. $2\sqrt{5}$  | 9. $5\sqrt{5}$   | 16. $30\sqrt{11}$         | 23. $17a$                 |
| 3. $2\sqrt{7}$  | 10. $5\sqrt{3x}$ | 17. $\frac{5}{3}\sqrt{3}$ | 24. $\frac{x}{\sqrt{x}}$  |
| 4. $2\sqrt{11}$ | 11. $3b\sqrt{2}$ | 18. $2c\sqrt{10c}$        | 25. $\frac{1}{2}\sqrt{3}$ |
| 5. $2\sqrt{13}$ | 12. $10\sqrt{2}$ | 19. $2a^2\sqrt{15b}$      | 26. $\frac{2}{9}$         |
| 6. $8x^2$       | 13. 30           | 20. $8\sqrt{2}$           | 27. $\frac{7}{3}$         |
| 7. $6\sqrt{2}$  | 14. $24\sqrt{3}$ | 21. $3x\sqrt{3x}$         |                           |

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|------------------|--------------------------|---------------------------|-----------------------|
| 1. $2\sqrt{181}$ | 5. $\sqrt{10}$           | 9. $\frac{5}{2}\sqrt{2}$  | 13. $(x+1)\sqrt{2}$   |
| 2. 23            | 6. $2x\sqrt{y}$          | 10. $\frac{7}{6}\sqrt{2}$ | 14. $(a-1)\sqrt{3}$   |
| 3. $4\sqrt{51}$  | 7. $\frac{2}{3}\sqrt{5}$ | 11. $\sqrt{5}$            | 15. $(a-3b)\sqrt{5}$  |
| 4. $9\sqrt{2}$   | 8. $\frac{4}{7}\sqrt{2}$ | 12. $5b^2\sqrt{3}$        | 16. $(p+q)\sqrt{p-q}$ |