

Exercises ^[A-1]

Carry out the indicated operations. Simplify results as far as possible.

- | | |
|---|---|
| 1. $\sqrt{2}(\sqrt{2} + 1)$ | 13. $(3 - \sqrt{2})^2$ |
| 2. $2\sqrt{3}(2 - \sqrt{3})$ | 14. $(3 + \sqrt{2})(3 - \sqrt{2})$ |
| 3. $\sqrt{5}(1 + \sqrt{5})$ | 15. $(\sqrt{14} - \sqrt{7})^2$ |
| 4. $\sqrt{2}(2\sqrt{5} - \sqrt{8})$ | 16. $[(\sqrt{3} - 1)/3]^2$ |
| 5. $\sqrt{6}(2\sqrt{2} - \sqrt{3})$ | 17. $\frac{\sqrt{5} + 2}{3} \cdot \frac{\sqrt{5} - 2}{3}$ |
| 6. $(\sqrt{15} + \sqrt{5})/\sqrt{5}$ | 18. $\left(\frac{\sqrt{6} + 1}{2}\right)^2$ |
| 7. $(2\sqrt{3} - \sqrt{6})/\sqrt{3}$ | 19. $(\sqrt{40} + \sqrt{10}) \div \sqrt{10}$ |
| 8. $\sqrt{\frac{128}{3}} \cdot \sqrt{\frac{15}{8}}$ | 20. $\frac{-2 + \sqrt{20}}{-2}$ |
| 9. $(2\sqrt{3} + 3\sqrt{2})(3\sqrt{3} - \sqrt{2})$ | 21. $\frac{-5 + 2\sqrt{50}}{15}$ |
| 10. $(\sqrt{6} - \sqrt{3})^2$ | |
| 11. $(\sqrt{3} + 1)(\sqrt{3} - 1)$ | |
| 12. $(\sqrt{3} + \sqrt{2})^2$ | |

Exercises ^[A-2]

Carry out the indicated operations. Simplify results as far as possible.

- | | |
|---|---|
| 1. $\sqrt{3}(2\sqrt{3} + 4)$ | 14. $(\sqrt{6} + \sqrt{3})(\sqrt{6} - \sqrt{3})$ |
| 2. $\sqrt{2}(6 + \sqrt{2})$ | 15. $\frac{\sqrt{3} - 1}{2} \cdot \frac{\sqrt{3} + 1}{2}$ |
| 3. $3\sqrt{3}(\sqrt{2} + \sqrt{3})$ | 16. $\left(\frac{1 + \sqrt{2}}{2}\right)^2$ |
| 4. $\sqrt{5}(\sqrt{5} + \sqrt{10})$ | 17. $\left(\frac{2 - \sqrt{5}}{3}\right)^2$ |
| 5. $2\sqrt{3}(4 - \sqrt{21})$ | 18. $(\sqrt{15} - \sqrt{19})/\sqrt{5}$ |
| 6. $(\sqrt{2} + 2\sqrt{6}) \div \sqrt{2}$ | 19. $\frac{-10 + 2\sqrt{10}}{2}$ |
| 7. $\sqrt{\frac{5}{14}} \cdot \sqrt{\frac{7}{10}}$ | 20. $\frac{6 + \sqrt{18}}{6}$ |
| 8. $\sqrt{\frac{18}{13}} \div \sqrt{\frac{54}{65}}$ | 21. $\frac{16 + 32\sqrt{28}}{4}$ |
| 9. $(\sqrt{5} - 1)(\sqrt{5} + 1)$ | |
| 10. $(\sqrt{5} - 2)^2$ | |
| 11. $(\sqrt{2} + 2)(\sqrt{2} - 2)$ | |
| 12. $(2 + \sqrt{3})^2$ | |
| 13. $(\sqrt{6} + \sqrt{2})^2$ | |

Page 435 (top)

1. $2 + \sqrt{2}$

4. $2\sqrt{10} - 4$

7. $2 - \sqrt{2}$

10. $9 - 6\sqrt{3}$

2. $4\sqrt{3} - 6$

5. $4\sqrt{3} - 3\sqrt{2}$

8. $4\sqrt{5}$

11. 2

3. $\sqrt{5} + 5$

6. $\sqrt{3} + 1$

9. $12 + 7\sqrt{6}$

12. $5 + 2\sqrt{6}$

13. $11 - 6\sqrt{2}$

16. $\frac{4 - 2\sqrt{3}}{9}$

19. 3

14. 7

17. $\frac{1}{9}$

20. $1 - \sqrt{5}$

15. $21 - 14\sqrt{2}$

18. $\frac{7 + 2\sqrt{6}}{4}$

21. $\frac{-1 + 2\sqrt{2}}{3}$

Page 435 (bottom)

1. $6 + 4\sqrt{3}$

7. $\frac{1}{2}$

12. $7 + 4\sqrt{3}$

17. $\frac{9 - 4\sqrt{5}}{9}$

2. $6\sqrt{2} + 2$

8. $\sqrt{\frac{5}{3}}$

13. $8 + 4\sqrt{3}$

18. $\sqrt{3} - \sqrt{\frac{19}{5}}$

3. $3\sqrt{6} + 9$

9. 4

14. 3

19. $-5 + \sqrt{10}$

4. $5 + 5\sqrt{2}$

10. $9 - 4\sqrt{5}$

15. $\frac{1}{2}$

20. $1 + \frac{1}{2}\sqrt{2}$

5. $8\sqrt{3} - 6\sqrt{7}$

11. -2

16. $\frac{3 + 2\sqrt{2}}{4}$

21. $4 + 16\sqrt{7}$

6. $1 + 2\sqrt{3}$