

Exercises <sup>[A]</sup>

Multiply. The radicand in the product should be as small as possible.

- |                                |  |  |
|--------------------------------|--|--|
| 1. $\sqrt{6} \cdot \sqrt{6}$   | 12. $\sqrt{6} \cdot \sqrt{\frac{2}{3}}$            | 23. $\sqrt{2ab} \cdot \sqrt{3ab}$              |
| 2. $\sqrt{7} \cdot \sqrt{7}$   | 13. $\sqrt{\frac{2}{3}} \cdot \sqrt{\frac{3}{2}}$  | 24. $\sqrt{5a^2c} \cdot \sqrt{ac}$             |
| 3. $\sqrt{6} \cdot \sqrt{2}$   | 14. $\sqrt{\frac{5}{7}} \cdot \sqrt{\frac{14}{5}}$ | 25. $\sqrt{x^3} \cdot \sqrt{x^3}$              |
| 4. $\sqrt{8} \cdot \sqrt{3}$   | 15. $\sqrt{18} \cdot \sqrt{32}$                    | 26. $\sqrt{b} \cdot \sqrt{2b}$                 |
| 5. $\sqrt{7} \cdot \sqrt{14}$  | 16. $\sqrt{17} \cdot \sqrt{51}$                    | 27. $\sqrt{45} \cdot \sqrt{80}$                |
| 6. $\sqrt{5} \cdot \sqrt{6}$   | 17. $\sqrt{5} \cdot \sqrt{\frac{3}{5}}$            | 28. $\sqrt{27} \cdot \sqrt{108}$               |
| 7. $\sqrt{3} \cdot \sqrt{3}$   | 18. $22 \cdot 2\sqrt{5}$                           | 29. $\sqrt{10} \cdot \sqrt{125}$               |
| 8. $\sqrt{10} \cdot \sqrt{4}$  | 19. $30 \cdot 5\sqrt{7}$                           | 30. $\sqrt{8} \cdot \sqrt{6} \cdot \sqrt{3}$   |
| 9. $\sqrt{3} \cdot \sqrt{27}$  | 20. $19 \cdot 2\sqrt{11}$                          | 31. $\sqrt{14} \cdot \sqrt{7} \cdot \sqrt{21}$ |
| 10. $\sqrt{15} \cdot \sqrt{5}$ | 21. $\sqrt{a} \cdot \sqrt{a^2}$                    | 32. $\sqrt{x} \cdot \sqrt{\frac{4a}{x}}$       |
| 11. $\sqrt{2} \cdot \sqrt{18}$ | 22. $\sqrt{a^3} \cdot \sqrt{a^4}$                  |  |

## Irrational Numbers

431

- |  |  |                                       |
|--|--|---------------------------------------|
| 33. $\sqrt{98x} \cdot \sqrt{\frac{1}{2}x}$             | 40. $7\sqrt{21} \cdot 3\sqrt{3}$                 | 47. $(2\sqrt{12})^2$                  |
| 34. $\sqrt{\frac{10}{11}} \cdot \sqrt{\frac{22}{5}}$   | 41. $20\sqrt{20} \cdot 5\sqrt{5}$                | 48. $(5\sqrt{3x})^2$                  |
| 35. $\sqrt{\frac{14}{27}} \cdot \sqrt{\frac{4}{21}}$   | 42. $6\sqrt{14} \cdot 2\sqrt{7}$                 | 49. $5(\sqrt{3x})^2$                  |
| 36. $\sqrt{\frac{96}{25}} \cdot \sqrt{\frac{125}{54}}$ | 43. $8a\sqrt{5a} \cdot 3\sqrt{10a}$              | 50. $6\sqrt{(3x)^2}$                  |
| 37. $\sqrt{3b} \cdot \sqrt{6b} \cdot \sqrt{b}$         | 44. $3\sqrt{6} \cdot 5\sqrt{5} \cdot 2\sqrt{15}$ | 51. $\sqrt{5(3x)} \cdot 5\sqrt{3x}$   |
| 38. $4\sqrt{10} \cdot 5\sqrt{12}$                      | 45. $(5\sqrt{3})^2$                              | 52. $7(3\sqrt{7})^2$                  |
| 39. $3\sqrt{5} \cdot 2\sqrt{5}$                        | 46. $(2\sqrt{6})^2$                              | 53. $5x^2\sqrt{5x^2} \cdot 5\sqrt{x}$ |

Pages 430-431

- |                        |                          |                                  |                             |
|------------------------|--------------------------|----------------------------------|-----------------------------|
| <u>1.</u> 6            | <u>14.</u> $\sqrt{2}$    | <u>28.</u> 54                    | <u>41.</u> 1000             |
| <u>2.</u> 7            | <u>15.</u> 24            | <u>29.</u> $25\sqrt{2}$          | <u>42.</u> $84\sqrt{2}$     |
| <u>3.</u> $2\sqrt{3}$  | <u>16.</u> $17\sqrt{3}$  | <u>30.</u> 12                    | <u>43.</u> $120a^2\sqrt{2}$ |
| <u>4.</u> $2\sqrt{6}$  | <u>17.</u> $\sqrt{3}$    | <u>31.</u> $7\sqrt{42}$          | <u>44.</u> $450\sqrt{2}$    |
| <u>5.</u> $7\sqrt{2}$  | <u>18.</u> $44\sqrt{5}$  | <u>32.</u> $2\sqrt{a}$           | <u>45.</u> 75               |
| <u>6.</u> $\sqrt{30}$  | <u>19.</u> $150\sqrt{7}$ | <u>33.</u> $7x$                  | <u>46.</u> 24               |
| <u>7.</u> 3            | <u>20.</u> $38\sqrt{11}$ | <u>34.</u> 2                     | <u>47.</u> 48               |
| <u>8.</u> $2\sqrt{10}$ | <u>21.</u> $a\sqrt{a}$   | <u>35.</u> $\frac{2\sqrt{2}}{9}$ | <u>48.</u> $75x$            |
| <u>9.</u> 9            | <u>22.</u> $a^3\sqrt{a}$ | <u>36.</u> $\frac{4\sqrt{5}}{3}$ | <u>49.</u> $15x$            |
| <u>10.</u> $5\sqrt{3}$ | <u>23.</u> $ab\sqrt{6}$  | <u>37.</u> $3b\sqrt{2b}$         | <u>50.</u> $18x$            |
| <u>11.</u> 6           | <u>24.</u> $a\sqrt{5a}$  | <u>38.</u> $40\sqrt{30}$         | <u>51.</u> $15x\sqrt{5}$    |
| <u>12.</u> 2           | <u>25.</u> $x^3$         | <u>39.</u> 30                    | <u>52.</u> 441              |
| <u>13.</u> 1           | <u>26.</u> $b\sqrt{2}$   | <u>40.</u> $63\sqrt{7}$          | <u>53.</u> $25x^3\sqrt{5x}$ |

Page 432 (top)

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