

**Additional Exercises 7.5****Form I**

## Multiplying with More Than One Term and Rationalizing Denominators

Multiply as indicated and then simplify if possible. Assume that all variables represent positive real numbers.

1.  $\sqrt{3}(\sqrt{7} + \sqrt{5})$  1. \_\_\_\_\_

2.  $\sqrt{5}(\sqrt{6} - \sqrt{5})$  2. \_\_\_\_\_

3.  $\sqrt[3]{4}(\sqrt[3]{3} + \sqrt[3]{2})$  3. \_\_\_\_\_

4.  $3\sqrt{3}(\sqrt{7} - 2\sqrt{2})$  4. \_\_\_\_\_

5.  $(\sqrt{11} + 5)(\sqrt{11} - 5)$  5. \_\_\_\_\_

6.  $(\sqrt{5} + 2)^2$  6. \_\_\_\_\_

7.  $(\sqrt{15} + \sqrt{6})(\sqrt{15} - \sqrt{6})$  7. \_\_\_\_\_

Rationalize each denominator. Simplify if possible. Assume that all variables represent positive real numbers.

8.  $\frac{1}{\sqrt{5}}$  8. \_\_\_\_\_

9.  $\sqrt{\frac{6}{x}}$  9. \_\_\_\_\_

10.  $\sqrt[3]{\frac{2}{3}}$  10. \_\_\_\_\_

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11.  $\sqrt[3]{\frac{5x}{16x^2}}$

11. \_\_\_\_\_

12.  $\sqrt[3]{\frac{1}{4x}}$

12. \_\_\_\_\_

13.  $\frac{3}{5-\sqrt{7}}$

13. \_\_\_\_\_

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

14. \_\_\_\_\_

15.  $\frac{4}{\sqrt{3}-\sqrt{2}}$

15. \_\_\_\_\_

16.  $\frac{2\sqrt{5}}{\sqrt{5}+2}$

16. \_\_\_\_\_

Rationalize each numerator. Assume that all variables represent positive real numbers.

17.  $\frac{\sqrt{7}}{\sqrt{5}}$

17. \_\_\_\_\_

18.  $\sqrt{\frac{5}{2}}$

18. \_\_\_\_\_

19.  $\frac{3\sqrt{2}}{\sqrt{3}}$

19. \_\_\_\_\_

20.  $\frac{\sqrt{11}}{7a}$

20. \_\_\_\_\_

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**Additional Exercises 7.5****Form II**

## Multiplying with More Than One Term and Rationalizing Denominators

Multiply as indicated and then simplify if possible. Assume that all variables represent positive real numbers.

1.  $\sqrt{5}(\sqrt{7} - \sqrt{3})$  1. \_\_\_\_\_

2.  $(\sqrt{10} - \sqrt{5})(\sqrt{10} + \sqrt{5})$  2. \_\_\_\_\_

3.  $\sqrt[3]{5}(\sqrt[3]{7} + \sqrt[3]{2})$  3. \_\_\_\_\_

4.  $(\sqrt{7} - 3)^2$  4. \_\_\_\_\_

5.  $\sqrt[3]{x}(3\sqrt[3]{x} - 4\sqrt[3]{x^2})$  5. \_\_\_\_\_

6.  $(\sqrt{15} + \sqrt{2})^2$  6. \_\_\_\_\_

7.  $(\sqrt{14} + 3\sqrt{5})(\sqrt{6} - 2\sqrt{5})$  7. \_\_\_\_\_

Rationalize each denominator. Simplify if possible. Assume that all variables represent positive real numbers.

8.  $\frac{1}{\sqrt{7}}$  8. \_\_\_\_\_

9.  $\sqrt{\frac{6x}{3y}}$  9. \_\_\_\_\_

10.  $\sqrt[3]{\frac{2}{9x}}$  10. \_\_\_\_\_

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11.  $\sqrt[5]{\frac{7}{y^6}}$

11. \_\_\_\_\_

12.  $\sqrt[3]{\frac{5x}{6x^2y}}$

12. \_\_\_\_\_

13.  $\frac{5}{8-\sqrt{5}}$

13. \_\_\_\_\_

14.  $\frac{\sqrt{3}}{\sqrt{6}+2}$

14. \_\_\_\_\_

15.  $\frac{\sqrt{7}+\sqrt{2}}{\sqrt{7}-\sqrt{2}}$

15. \_\_\_\_\_

16.  $\frac{3\sqrt{10}}{\sqrt{6}-\sqrt{4}}$

16. \_\_\_\_\_

Rationalize each numerator. Assume that all variables represent positive real numbers.

17.  $\frac{\sqrt{6}}{\sqrt{5x}}$

17. \_\_\_\_\_

18.  $\sqrt{\frac{17}{2}}$

18. \_\_\_\_\_

19.  $\frac{8\sqrt{3}}{\sqrt{10}}$

19. \_\_\_\_\_

20.  $\frac{\sqrt{15x}}{3x}$

20. \_\_\_\_\_

**Additional Exercises 7.5****Form III**

## Multiplying with More Than One Term and Rationalizing Denominators

Multiply as indicated and then simplify if possible. Assume that all variables represent positive real numbers.

1.  $\sqrt[3]{6}(\sqrt[3]{3} + \sqrt[3]{2})$  1. \_\_\_\_\_

2.  $(4\sqrt{2} - 7)^2$  2. \_\_\_\_\_

3.  $(\sqrt{19} + \sqrt{7})(\sqrt{5} - \sqrt{7})$  3. \_\_\_\_\_

4.  $(\sqrt{5} + \sqrt{3})^2$  4. \_\_\_\_\_

5.  $\sqrt[4]{6}(\sqrt[4]{8} - \sqrt[4]{3})$  5. \_\_\_\_\_

6.  $(2\sqrt{6} + 3\sqrt{5})(2\sqrt{6} - 3\sqrt{5})$  6. \_\_\_\_\_

7.  $\sqrt[3]{x}(\sqrt[3]{2000x^2} - \sqrt[3]{x})$  7. \_\_\_\_\_

Rationalize each denominator. Simplify if possible. Assume that all variables represent positive real numbers.

8.  $\frac{6}{\sqrt{7y}}$  8. \_\_\_\_\_

9.  $\sqrt[3]{\frac{7}{9x^2}}$  9. \_\_\_\_\_

10.  $\frac{xy\sqrt[3]{2}}{\sqrt[3]{xy^2}}$  10. \_\_\_\_\_

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11.  $\sqrt[4]{\frac{2x}{9x^2}}$  11. \_\_\_\_\_

12.  $\sqrt{\frac{16}{13y}}$  12. \_\_\_\_\_

13.  $\frac{4}{\sqrt{6}-2}$  13. \_\_\_\_\_

14.  $\frac{\sqrt{3}}{\sqrt{5}+\sqrt{2}}$  14. \_\_\_\_\_

15.  $\frac{2\sqrt{10}-\sqrt{6}}{3\sqrt{5}-4\sqrt{2}}$  15. \_\_\_\_\_

16.  $\frac{6\sqrt{x}+\sqrt{y}}{\sqrt{y}-6\sqrt{x}}$  16. \_\_\_\_\_

Rationalize each numerator. Assume that all variables represent positive real numbers.

17.  $\frac{7\sqrt{x}}{\sqrt{5y}}$  17. \_\_\_\_\_

18.  $\frac{3\sqrt{6}}{2\sqrt{2}}$  18. \_\_\_\_\_

19.  $\frac{7-\sqrt{2}}{4+6\sqrt{2}}$  19. \_\_\_\_\_

20.  $\frac{2+\sqrt{5}}{2-\sqrt{5}}$  20. \_\_\_\_\_