

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 9.4**  
**Form I**  
Rationalizing the Denominator

Rationalize each denominator. Then simplify the rationalized expression if possible.

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

1. \_\_\_\_\_

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

2. \_\_\_\_\_

3.  $\frac{3}{\sqrt{6}}$

3. \_\_\_\_\_

4.  $\frac{5}{\sqrt{10}}$

4. \_\_\_\_\_

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

5. \_\_\_\_\_

6.  $\sqrt{\frac{1}{7}}$

6. \_\_\_\_\_

7.  $\sqrt{\frac{3}{10}}$

7. \_\_\_\_\_

Simplify each expression. Then rationalize the denominator.

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

8. \_\_\_\_\_

9.  $\frac{1}{\sqrt{12}}$

9. \_\_\_\_\_

10.  $\sqrt{\frac{1}{24}}$

10. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

11.  $\sqrt{\frac{5}{12}}$

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

12.  $\sqrt{\frac{7}{18}}$

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

13.  $\frac{10}{\sqrt{20}}$

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

14.  $\frac{15}{\sqrt{40}}$

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

15.  $\sqrt{\frac{3}{50}}$

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

Rationalize each denominator. Then simplify if possible.

16.  $\frac{1}{5-\sqrt{3}}$

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

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

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

18.  $\frac{10}{10-\sqrt{6}}$

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

19.  $\frac{5}{\sqrt{5}+\sqrt{3}}$

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

20.  $\frac{4}{\sqrt{6}-\sqrt{5}}$

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

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 9.4**  
**Form II**  
Rationalizing the Denominator

Rationalize each denominator. Then simplify the rationalized expression if possible.

1.  $\sqrt{\frac{2}{3}}$  1. \_\_\_\_\_

2.  $\sqrt{\frac{1}{6}}$  2. \_\_\_\_\_

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

4.  $\frac{8}{\sqrt{10}}$  4. \_\_\_\_\_

5.  $\frac{3}{\sqrt{15}}$  5. \_\_\_\_\_

6.  $\frac{\sqrt{6}}{\sqrt{11}}$  6. \_\_\_\_\_

7.  $\sqrt{\frac{4}{7}}$  7. \_\_\_\_\_

Simplify each expression. Then rationalize the denominator.

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

9.  $\frac{5}{\sqrt{20}}$  9. \_\_\_\_\_

10.  $\sqrt{\frac{1}{32}}$  10. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

11.  $\sqrt{\frac{7}{24}}$

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

12.  $\frac{5}{\sqrt{32}}$

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

13.  $\sqrt{\frac{8}{30}}$

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

14.  $\frac{\sqrt{3}}{\sqrt{22}}$

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

Rationalize each denominator. Then simplify if possible.

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

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

16.  $\frac{3}{8-\sqrt{6}}$

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

17.  $\frac{4}{\sqrt{6}-\sqrt{2}}$

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

18.  $\frac{6}{\sqrt{5}+\sqrt{3}}$

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

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

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

20.  $\frac{5+\sqrt{3}}{\sqrt{6}-\sqrt{3}}$

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

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 9.4****Form III****Rationalizing the Denominator**

Rationalize each denominator. Then simplify the rationalized expression if possible.

1.  $\frac{6}{\sqrt{10}}$

1. \_\_\_\_\_

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

2. \_\_\_\_\_

3.  $\frac{6}{\sqrt{3}}$

3. \_\_\_\_\_

4.  $\sqrt{\frac{3}{7}}$

4. \_\_\_\_\_

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

5. \_\_\_\_\_

6.  $\sqrt{\frac{2}{5xy}}$

6. \_\_\_\_\_

Simplify each expression. Then rationalize the denominator.

7.  $\frac{3}{\sqrt{20}}$

7. \_\_\_\_\_

8.  $\frac{2}{\sqrt{48}}$

8. \_\_\_\_\_

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

9. \_\_\_\_\_

10.  $\sqrt{\frac{4y}{28y}}$

10. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

11.  $\frac{\sqrt{10}}{\sqrt{32}}$

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

12.  $\sqrt{\frac{5}{72x^3}}$

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

13.  $\frac{\sqrt{12x}}{\sqrt{27xy^3}}$

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

14.  $\sqrt{\frac{6}{40ab^5}}$

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

Rationalize each denominator. Then simplify if possible.

15.  $\frac{8}{6-\sqrt{5}}$

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

16.  $\frac{14}{7+\sqrt{5}}$

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

17.  $\frac{\sqrt{6}}{\sqrt{5}-\sqrt{3}}$

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

18.  $\frac{\sqrt{5}}{\sqrt{10}+\sqrt{3}}$

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

19.  $\frac{3\sqrt{2}}{\sqrt{6}-\sqrt{3}}$

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

20.  $\frac{2\sqrt{6}+\sqrt{10}}{\sqrt{10}-\sqrt{6}}$

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