

3.0 Review of Fractions, Exponents  
Rules, and Factoring

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Simplify. NO CALCULATORS!!!**

1.  $-\frac{5}{6} \cdot \frac{3}{4}$

2.  $\left(-\frac{3}{10}\right)\left(3\frac{3}{5}\right)$

3.  $-\frac{5}{16} \div \frac{15}{4}$

4.  $-3\frac{3}{4} \div 2$

5.  $\frac{7}{6} + \frac{3}{4}$

6.  $-4\frac{1}{4} - \frac{3}{2}$

7.  $3x^2 \cdot 5x^6$

8.  $-x^5 \cdot 9x^{-3}$

9.  $\frac{8x^2}{16x^3}$

10.  $\frac{8x^2}{2x^5}$

11.  $(x^4)^3$

12.  $(5x^6)^2$

13.  $\frac{5xy^3}{5x^5y^5}$

14.  $\left(\frac{2x^8y^4z^9}{4x^5y^4}\right)^2$

15.  $x^{-2}$

16.  $7x^{-5}$

17.  $3^4$

18.  $3^{-4}$

**Factor completely.**

19.  $x^2 - 16$

20.  $x^2 - 6x + 5$

21.  $x^3 - 64$

22.  $25x^2 - 81$

23.  $10x^2 + 31x + 21$

24.  $x^2 - 7x + 18$

25.  $8x^3 + 125$

26.  $5x^2 - 39x - 8$

27.  $4x^2 - 40x$

28.  $64x^2 - 81y^2$

29.  $-8x^2 + 8x + 70$

30.  $2x^2 - 50$