

## 4.5 Dividing Polynomials

Name \_\_\_\_\_

Simplify.	
1. $\frac{15x^5}{3x^2}$	2. $\frac{20x^7}{5x^3}$
3. $\frac{15y^5}{9y^7}$	4. $\frac{16a^3}{12a^4}$
5. $\frac{-8a^2b^7}{24a^2b^2}$	6. $\frac{-15ab^5}{25a^2b^2}$
7. $\frac{-3xy^4z^5}{-9x^5y^4z^4}$	8. $\frac{-2x^2yz^3}{-10xy^2z^2}$
Answers: 1. $5x^3$ ; 3. $\frac{5}{3y^2}$ ; 5. $-\frac{b^5}{3}$ ; 7. $\frac{z}{3x^4}$	

Simplify.

9.  $\frac{12x^5 + 9x^4}{3x^2}$

10.  $\frac{15x^4 + 10x^3}{5x^2}$

11.  $\frac{-18a^7 + 12a^5 - 24a^3}{6a}$

12.  $\frac{15x^3 - 12x^2 + 21x}{3x}$

13.  $\frac{20x^3 - 15x^2 + 35x}{-5x}$

14.  $\frac{12x^4 - 8x^3 + 4x}{-4x}$

Answers: 9.  $4x^3 + 3x^2$ ; 11.  $-3a^6 + 2a^4 - 4a^2$ ; 13.  $-4x^2 + 3x - 7$

Divide.

15.  $x+3 \overline{)x^2+8x+15}$

16.  $x+2 \overline{)x^2+6x+8}$

17.  $3x+2 \overline{)3x^2+14x+8}$

18.  $x+3 \overline{)2x^2+x-15}$

Answers: 15.  $x+5$ ; 17.  $x+4$

Divide.

**19.**  $(x^3 - 64) \div (x - 4)$

**20.**  $(x^3 - 125) \div (x - 5)$

**21.**  $(3x^4 + x^2 + x - 2) \div (x + 1)$

**22.**  $(2x^4 - x^2 + x - 2) \div (x - 1)$

Answers: **19.**  $x^2 + 4x + 16$ ; **21.**  $3x^3 - 3x^2 + 4x - 3 + \frac{1}{x+1}$