

# Review Solutions

$$16. m^3 \cdot m^5 = m^8$$

$$17. f^{-7} \cdot f^4 = \frac{1}{f^3}$$

$$18. (3x^2)^3 = 27x^6$$

$$19. (2y)(4xy^3) = 8xy^4$$

$$20. \left(\frac{3}{5}c^2f\right)\left(\frac{4}{3}cd\right)^2 = \frac{16}{15}c^4d^2f$$

$$\frac{3}{5}c^2f \left(\frac{4}{3}\right)^2 c^2d^2 = \frac{48}{45}c^4d^2f = \frac{16}{15}c^4d^2f$$

$$21. \frac{1}{x^0+y^0} - \frac{x^0+y^0}{1} = \frac{1}{1+1} - \frac{1+1}{1} = \frac{1}{2} - 2 = -\frac{3}{2}$$

$$22. 3(ab)^3(4ac^2) + c(4ab)(5a^3b^2c)$$
$$(3a^3b^3)(4ac^2) + (4abc)(5a^3b^2c)$$
$$12a^4b^3c^2 + 20a^4b^3c^2 = 32a^4b^3c^2$$

$$26. (4c-5) - (c+11) + (-6c+17)$$
$$4c-5-c-11-6c+17 = -3c+1$$

$$27. (11x^2+13x-15) - (7x^2-9x+19)$$
$$11x^2+13x-15-7x^2+9x-19 = 4x^2+22x-34$$

$$28. -6m^2(3mn + 13m - 5n)$$

$$\boxed{-18m^3n - 78m^3 + 30m^2n}$$

~~$$28. (d-5)(d+5)$$

$$d^2 + 5d - 5d - 25$$

$$\boxed{d^2 - 25}$$~~

$$29. (d-5)(d+3) = d^2 + 3d - 5d - 15$$

$$\boxed{d^2 - 2d - 15}$$

$$30. x^{-8}y^{10}(x^{11}y^{-9} + x^{10}y^{-6})$$

$$x^{-8+11}y^{10-9} + x^{10-8}y^{-6+10} = \boxed{x^3y + x^2y^4}$$

$$31. (2a^2 + 6)^2 = (2a^2 + 6)(2a^2 + 6)$$

$$4a^4 + 12a^2 + 12a^2 + 36$$

$$\boxed{4a^4 + 24a^2 + 36}$$

$$32. -5f^{12}(4f^3g + 2f)$$

$$\boxed{-20f^{15}g - 10f^{13}}$$

$$33. (2b-3c)^3 = (2b-3c)(2b-3c)(2b-3c)$$

$$(4b^2 - 6bc - 6bc + 9c^2)(2b-3c)$$

$$(4b^2 - 12bc + 9c^2)(2b-3c)$$

$$4b^2(2b) + 4b^2(-3c) - 12bc(2b) - 12bc(-3c) + 9c^2(2b) + 9c^2(-3c)$$

$$8b^3 - 12b^2c - 24b^2c + 36bc^2 + 18c^2b - 27c^3$$

$$\boxed{8b^3 - 36b^2c + 54bc^2 - 27c^3}$$

$$34) \quad 3 \overline{) \begin{array}{r} 2 \quad -6 \quad 1 \quad -3 \quad -3 \\ \underline{6 \quad 0 \quad 3 \quad 0} \\ 2 \quad 0 \quad 1 \quad 0 \quad | \quad -3 \end{array}}$$

$$\boxed{2x^3 + x - \frac{3}{x-3}}$$

$$35) \quad -1 \overline{) \begin{array}{r} 10 \quad 5 \quad 4 \quad 0 \quad -9 \\ \underline{-10 \quad 5 \quad -9 \quad 9} \\ 10 \quad -5 \quad 9 \quad -9 \quad | \quad 0 \end{array}}$$

$$\boxed{10x^3 - 5x^2 + 9x - 9}$$

$$36) \quad 1 \overline{) \begin{array}{r} 1 \quad -5 \quad 4 \\ \underline{\quad 1 \quad -4} \\ 1 \quad -4 \quad | \quad 0 \end{array}}$$

$$\boxed{x-4}$$

$$37) \quad x^2 + 3x \overline{) \begin{array}{r} \boxed{5x^2 + 3x + 1} \\ \underline{5x^4 + 18x^3 + 10x^2 + 3x} \\ -(5x^4 + 15x^3) \\ \hline 3x^3 + 10x^2 \\ \underline{-(3x^3 + 9x^2)} \\ \hline x^2 + 3x \\ \underline{-(x^2 + 3x)} \\ \hline 0 \end{array}}$$

$$38) \quad 200x^2 - 50$$

$$50(4x^2 - 1)$$

$$\boxed{50(2x-1)(2x+1)}$$

39)  $10a^3 - 20a^2 - 2a + 4$  (4 grouping don't do)

40) Grouping don't do

41) Perfect Cubes (don't do)

42)  $x^2 - 7x + 5$  already simplified.  
(x ) (x )

\* Use your homework from section 5.4 and  
\* Practice 5.4 for factoring examples for the  
test.