Name: _____

1. Expand these products.

    a. $(a + 5b)^2$

    b. $(x + 2 + 3y)^2$

    c. $(2s - 5)^3$

    d. $(s - 4)(s^2 + 4s + 16)$

2. Factor these expressions completely.

    a. $4pq - 14q^2 - 16pq^2$

    b. $4x^2 - 100y^2$

    c. $3n^2 - 20n + 20$

    d. $120x^2 + 220xh - 40h^2$

2   Continued

    e. $12a^3 + 96a^3b^3$

    f. $x^6 - 81y^2$

3.   Reduce these fractions to simplest terms.

    a. $\dfrac{3t-6}{4t^3-8t^2}$

    b $\dfrac{3y^3+7y^2+4y}{y^2+5y+4}$

    c. $\dfrac{4x^3-9x}{8x^2+10x-3} \div \dfrac{2x^3-3x^2}{8x^2+18x-5}$

4. Perform the indicated operations and simplify these expressions.

a. $\dfrac{1}{a^2-1}-\dfrac{2}{3-3a}$

b. $\dfrac{x-1}{2x^3-4x^2}+\dfrac{5}{x-2}$

c. $\dfrac{\dfrac{x^2-9}{x}}{\dfrac{1}{x}-\dfrac{1}{3}}$

5. Solve this equation for x and check the solution.

a. $\dfrac{1}{2x-3}=\dfrac{5}{2x}-\dfrac{4}{2x^2-3x}$