

## 4-4 Assignment

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

**Simplify each expression.**

1) 
$$\frac{4a}{45a^2 - 45a} + \frac{3a - 2}{45a^2 - 45a}$$

$$\frac{7a - 2}{45a^2 - 45a}$$

2) 
$$\frac{4r + 4}{12r + 12} + \frac{r + 5}{12r + 12}$$

$$\frac{5r + 9}{12r + 12}$$

3) 
$$\frac{4n}{15n^2 - 18n} - \frac{6n}{3n}$$

$$\frac{-30n + 40}{3(5n - 6)}$$

4) 
$$\frac{3}{n^2 + 7n + 10} - 4$$

$$\frac{-4n^2 - 28n - 37}{(n + 5)(n + 2)}$$

5) 
$$\frac{2}{n + 6} + \frac{3n}{n - 3}$$

$$\frac{20n - 6 + 3n^2}{(n - 3)(n + 6)}$$

6) 
$$\frac{k + 3}{k^2 - 2k - 15} + 3k$$

$$\frac{3k^2 - 15k + 1}{k - 5}$$

7) 
$$\frac{4}{2x^2 - 6x} - \frac{4}{x + 4}$$

$$\frac{-4x^2 + 14x + 8}{x(x - 3)(x + 4)}$$

8) 
$$\frac{6v}{3v^2 + 21v + 18} + \frac{5v}{3v}$$

$$\frac{41v + 5v^2 + 30}{3(v + 6)(v + 1)}$$

9) 
$$\frac{3x}{x^2 + 6x + 8} - \frac{7}{x^2 - 3x - 10}$$

$$\frac{3x^2 - 22x - 28}{(x + 2)(x + 4)(x - 5)}$$

10) 
$$\frac{x + 4}{x^2 - x - 6} + \frac{x + 1}{x^2 + 3x - 18}$$

$$\frac{2x^2 + 13x + 26}{(x - 3)(x + 2)(x + 6)}$$

**Review: Expand completely.**

11)  $(3b + a)^4$

$$81b^4 + 108b^3a + 54b^2a^2 + 12ba^3 + a^4$$

12)  $(2x - y)^4$

$$16x^4 - 32x^3y + 24x^2y^2 - 8xy^3 + y^4$$