

# Practice Exercises

Simplify the following rational expressions.

$$1. \frac{4x + 16}{2x}$$

$$2. \frac{x - 5}{5 - x}$$

$$3. \frac{3x^3 + 6x^2}{3x^2}$$

$$4. \frac{4x^2 - 4x + 1}{2x - 1}$$

$$5. \frac{x^2 + 5x + 6}{x + 3}$$

# Problem Set

Simplify the following rational expressions.

1.  $\frac{x^2 + 3x}{x + 3}$

2.  $\frac{2x^2 + 8x}{2x}$

3.  $\frac{x^2 - 16}{x - 4}$

4.  $\frac{x^3 + 64}{x^2 - 4x + 16}$

5.  $\frac{2x^2 - 9x - 5}{x - 5}$

6.  $\frac{2x^2 + 4x}{x + 2}$

7.  $\frac{4x^3 - 8x^2}{4x^2}$

8.  $\frac{4x^2 - 25}{2x - 5}$

9.  $\frac{8x^3 - 27}{4x^2 + 6x + 9}$

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

# Problem Set

$$1. \frac{x(x+3)}{x+3}$$

$$= x$$

$$2. \frac{2x(x+4)}{2x}$$

$$= x+4$$

$$3. \frac{(x-4)(x+4)}{x-4}$$

$$= x+4$$

$$4. \frac{(x+4)(x^2-4x+16)}{x^2-4x+16}$$

$$= x+4$$

$$5. \frac{(2x+1)(x-5)}{x-5}$$

$$= 2x+1$$

$$6. \frac{2x(x+2)}{x+2}$$

$$= 2x$$

$$7. \frac{4x^2(x-2)}{4x^2}$$

$$= x-2$$

$$8. \frac{(2x-5)(2x+5)}{2x-5}$$

$$= 2x+5$$

$$9. \frac{(2x-3)(4x^2+6x+9)}{4x^2+6x+9} = 2x-3$$

$$10. \frac{(3x-6)(x-2)}{x-2} = 3x-6$$