

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

# Dividing Polynomials Exit Quiz

Divide the following polynomials.

1.  $3a^3 + 6a^2 - 12a + 15b$  by 3

2.  $6x^3 + 4x^2 - 12x$  by  $2x$

3.  $8x^3 - 14x^2 - 5x - 1$  by  $2x - 1$

4.  $4x^3 + 5x - 6$  by  $2x - 3$

5.  $3x^3 + 11x^2 - 5x$  by  $x + 4$

# Dividing Polynomials Exit Quiz

Answer:

Divide the following polynomials.

1.  $3a^3 + 6a^2 - 12a + 15$  by 3

**Solution:**

$$\begin{array}{r} 3a^3 + 6a^2 - 12a + 15 \\ \underline{3} \\ = a^3 + 2a^2 - 4a + 5 \end{array}$$

2.  $6x^3 + 4x^2 - 12x$  by  $2x$

**Solution:**

$$\begin{array}{r} 6x^3 + 4x^2 - 12x \\ \underline{2x} \\ = 3x^2 + 2x - 4 \end{array}$$

3.  $8x^3 - 14x^2 - 5x - 1$  by  $2x - 1$

**Solution:**

$$\begin{array}{r} 4x^2 - 5x - 5 \\ 2x - 1 \overline{) 8x^3 - 14x^2 - 5x - 1} \\ \underline{-(8x^3 - 4x^2)} \\ -10x^2 - 5x \\ \underline{-(-10x^2 + 5x)} \\ -10x - 1 \\ \underline{-(-10x + 5)} \\ -6 \end{array}$$

$$= 4x^2 - 5x - 5 - \frac{6}{2x - 1}$$

4.  $4x^3 + 5x - 6$  by  $2x - 3$

**Solution:**

$$\begin{array}{r} 2x^2 + 3x + 7 \\ 2x - 3 \overline{) 4x^3 \phantom{+ 5x - 6}} \\ \underline{-(4x^3 - 6x^2)} \\ 6x^2 + 5x \\ \underline{-(6x^2 - 9x)} \\ 14x - 6 \\ \underline{-(14x - 21)} \\ 15 \end{array}$$

$$= 2x^2 + 3x + 7 + \frac{15}{2x - 3}$$

5.  $3x^3 + 11x^2 - 5x$  by  $x + 4$

**Solution:**

$$\begin{array}{r} x^3 \quad x^2 \quad x \quad c \\ 3 \quad 11 \quad -5 \quad 0 \quad \underline{-4} \\ \downarrow -12 \quad 4 \quad 4 \\ 3 \quad -1 \quad -1 \quad 4 \end{array}$$

$$= 3x^2 - x - 1 + \frac{4}{x + 4}$$