

# Practice Exercises

Use the factor theorem to determine whether the binomial is a factor of the given polynomial.

1.  $(x + 3); P(x) = 2x^3 + 11x^2 + 16x + 6$

2.  $(x + 1); P(x) = 2x^3 + 5x^2 + 4x + 1$

3.  $(x - 2); P(x) = 4x^3 - 11x^2 + 8x - 4$

4.  $(x + 3); P(x) = x^4 + 3x^3 - 2x^2 - 5x + 3$

5.  $(2x - 1); P(x) = 2x^3 - 7x^2 + x + 1$

# Problem Set

Use the factor theorem to determine whether the binomial is a factor of the given polynomial.

1.  $(x - 2); P(x) = x^{20} - 4x^{18} + 3x - 6$
2.  $(x - 4); P(x) = 3x^3 - 15x^2 + 10x + 8$
3.  $(x + 2); P(x) = x^4 - 3x^3 + 5x - 2$
4.  $(x - 2); P(x) = 3x^4 - 6x^3 + 5x + 10$
5.  $(x + 5); P(x) = x^3 + x^2 - 25x + 25$