

Use the Remainder Theorem to find the remainder when $f(x)$ is divided by $x - a$.

1. $f(x) = 2x^2 - 3x + 1$; $(x - 2)$

2. $f(x) = x^3 - x^2 + 2x - 1$; $(x + 3)$

3. $f(x) = 2x^3 - 3x^2 + 4x - 7$; $(x - 2)$

Use the Factor Theorem to determine whether the first polynomial is a factor of the second polynomial.

4. $x - 1$; $x^3 - x^2 + x - 1$

5. $x - 2$; $x^3 + 3x^2 - 4$

6. $x + 2$; $4x^3 + 9x^2 - 3x - 10$

7. $x - 3$; $x^3 - x^2 - x - 15$

Determine whether each binomial is a factor of $x^3 + x^2 - 16x - 16$.

8. $x + 2$

9. $x - 4$

10. $x + 1$

11. $x - 1$