

Section 3.2: Synthetic Division

Video 1

1) Divide using synthetic division: $\frac{x^3 - 5x^2 + 7x + 12}{x + 6}$.

2) Divide using synthetic division: $\frac{2x^4 - 3x^2 - 5x + 9}{x - 3}$.

3) Divide using synthetic division: $\frac{4x^2 - 7x - 15}{2x + 3}$

Video 2

4) Let $f(x) = -3x^4 + 15x^3 - 50x + 17$. Use the remainder theorem to find $f(5)$.

5) Let $f(x) = x^3 - 7x - 10$. Use the remainder theorem to find $f(-8)$.

6) Let $f(x) = 2x^2 + 6x - 21$. Use the remainder theorem to find $f(3 + 4i)$.

Video 3

7) Let $f(x) = 2x^3 + 9x^2 + 12$. Use synthetic division to determine if $k = 3$ is a zero of the polynomial function.

8) Let $f(x) = 2x^3 - 19x^2 + 4x + 160$. Use synthetic division to determine if $k = -\frac{5}{2}$ is a zero of the polynomial function.