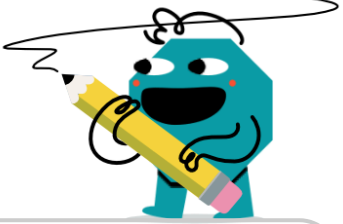
Name

Synthetic Division - Fully Factor a Polynomial



1 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 - 2x^2 - 11x + 12$$

A $(x-4)(x+4)(x+2)$	B $(x+3)(x-4)(x-1)$
C $(x-3)(x-3)(x-3)$	D $(x-2)(x-2)(x-4)$

2 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 + x^2 - 16x - 16$$

A $(x+3)(x-1)(x+3)$	B $(x+3)(x+3)(x+1)$
C $x(x+1)(x+3)$	D $(x+1)(x+4)(x-4)$

3 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 + 9x^2 + 26x + 24$$

A $(x-2)(x-1)(x-3)$	B $(x+2)(x+4)(x+3)$
C $(x-4)(x+3)(x-4)$	D $x(x+2)(x+1)$

4 Use factor theorem and synthetic division to fully factor this polynomial. $x^3 - x^2 - 2x$

A $(x-3)(x+4)(x-3)$	B $(x+2)(x+2)(x+1)$
C $(x-2)(x+1)x$	D $(x+2)x(x-1)$

5 Use factor theorem and synthetic division to fully factor this polynomial. $x^3 - 8x^2 + 16x$

A $(x-4)(x-4)(x+2)$	B $(x-4)(x-4)x$
C $(x+3)(x-2)(x-4)$	D $(x-2)(x-4)(x-3)$

6 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 - x^2 - 14x + 24$$

A $(x+3)(x+2)(x+4)$	B $(x-3)x(x-2)$
C $(x+4)(x+2)(x+1)$	D $(x-3)(x-2)(x+4)$

7 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 + x^2 - 8x - 12$$

A $(x+1)(x+3)(x+1)$	B $(x+4)xx$
C $x(x-4)x$	D $(x-3)(x+2)(x+2)$

8 Use factor theorem and synthetic division to fully factor this polynomial.

$$x^3 + 2x^2 - 16x - 32$$

A $(x-1)(x-4)(x+2)$	B $(x+1)(x+2)(x+3)$
C $(x-2)(x+2)(x+4)$	D $(x+2)(x-4)(x+4)$