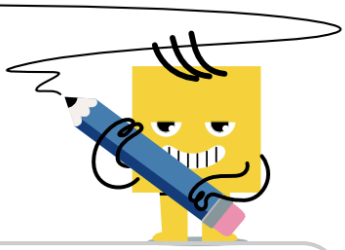
Name

Synthetic Division - Divide with a Remainder



1 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^3 - 6x^2 + 11x - 6}{(x + 4)}$$

A $2x^2 - 10x + 51 - \frac{210}{(x+4)}$

B $x^2 - 10x + 51 - \frac{210}{(x+4)}$

C $x^2 - 10x + 51 + \frac{210}{(x+4)}$

D $x^3 - 10x^2 + 51x - 210$

2 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^3 + 5x^2 + 8x + 4}{(x + 4)}$$

A $x^2 + x + 4 - \frac{12}{(x+4)}$

B $x^3 + x^2 + 4x - 12$

C $2x^2 + x + 4 - \frac{12}{(x+4)}$

D $x^2 + x + 4 + \frac{12}{(x+4)}$

3 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^3 + 4x^2 - 3x - 18}{(x + 2)}$$

A $2x^2 + 2x - 7 - \frac{4}{(x+2)}$

B $x^3 + 2x^2 - 7x - 4$

C $x^2 + 2x - 7 - \frac{4}{(x+2)}$

D $x^2 + 2x - 7 + \frac{4}{(x+2)}$

4 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^5 - 10x^4 + 32x^3 - 32x^2}{(x + 1)}$$

A $x^5 - 11x^4 + 43x^3 - 75x^2 + 75x - 75$

B $x^4 - 11x^3 + 43x^2 - 75x + 75 + \frac{75}{(x+1)}$

C $x^4 - 11x^3 + 43x^2 - 75x + 75 - \frac{75}{(x+1)}$

D $2x^4 - 11x^3 + 43x^2 - 75x + 75 - \frac{75}{(x+1)}$

5 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^3 - 4x}{(x + 4)}$$

A $x^3 - 4x^2 + 12x - 48$

B $x^2 - 4x + 12 + \frac{48}{(x+4)}$

C $x^2 - 4x + 12 - \frac{48}{(x+4)}$

D $2x^2 - 4x + 12 - \frac{48}{(x+4)}$

6 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^5 - 2x^4 - 21x^3 + 38x^2 + 80x - 96}{(x + 1)}$$

A $2x^4 - 3x^3 - 18x^2 + 56x + 24 - \frac{120}{(x+1)}$

B $x^4 - 3x^3 - 18x^2 + 56x + 24 - \frac{120}{(x+1)}$

C $x^4 - 3x^3 - 18x^2 + 56x + 24 + \frac{120}{(x+1)}$

D $x^3 - 3x^4 - 18x^3 + 56x^2 + 24x - 120$

7 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^3 + 3x^2 - 10x - 24}{(x - 1)}$$

A $x^2 + 4x - 6 + \frac{30}{(x-1)}$

B $x^3 + 4x^2 - 6x - 30$

C $2x^2 + 4x - 6 - \frac{30}{(x-1)}$

D $x^2 + 4x - 6 - \frac{30}{(x-1)}$

8 Use synthetic division to divide this polynomial by this binomial. What is the result?

$$\frac{x^5 - 4x^4 - 8x^3 + 42x^2 - 9x - 54}{(x - 0)}$$

A $x^5 - 4x^4 - 8x^3 + 42x^2 - 9x - 54$

B $x^4 - 4x^3 - 8x^2 + 42x - 9 + \frac{54}{(x-0)}$

C $x^4 - 4x^3 - 8x^2 + 42x - 9 - \frac{54}{(x-0)}$

D $2x^4 - 4x^3 - 8x^2 + 42x - 9 - \frac{54}{(x-0)}$