

1.1 Write $f(x) = 8x + 3x^8 - 2x^5$ in descending order.

How many terms does $f(x)$ have?

What degree is $f(x)$?

What is the lead coefficient of $f(x)$?

Write $g(x) = 1 - 9x$ in descending order.

How many terms does $g(x)$ have?

What degree is $g(x)$?

What is the lead coefficient of $g(x)$?

Write $p(x) = 2x^7 + x^5 - 3x^9$ in descending order.

How many terms does $p(x)$ have?

What degree is $p(x)$?

What is the lead coefficient of $p(x)$?

Simplify: $(3x^2 + 3) - (8x^2 - 2x)$

Simplify: $(7x + 4x^2 + 5) + (x^2 + 3)$

Simplify: $(2x - 9)^2$

Simplify: $(5x^2 - 3)(x + 10)$

1.2 Expand the binomial: $(x + 2)^5$

Expand the binomial: $(2x + 5)^3$

The a^5 term of the binomial expansion of $(a - 5)^9$ is given by which expression?

The a^5 term of the binomial expansion of $(3a + 1)^8$ is given by which expression?

1.3 Divide using Long Division:

$$\frac{x^2 + 11x + 28}{x + 5}$$

$$\frac{2x^3 - x - 5}{x - 2}$$

$$\frac{x^3 + 2x^2 + 5x + 1}{x^2 + 2x + 3}$$

1.4 What is the dividend polynomial?

$$\begin{array}{r|rrr} \boxed{6} & 1 & -2 & 7 \\ & \downarrow & 6 & 24 \\ \hline & 1 & 4 & 31 \end{array}$$

What is the divisor polynomial?

Interpret the results of the synthetic division.

What is the remainder of $\frac{3x^3 + x^2 - 5x - 7}{x - 2}$

Mixed Simplify:

Review:

$$(9x - 11) - (2x - 14) + (10x - 31)$$

Simplify:

$$(3x - 5)(8x^2 - 11x + 13)$$

Use synthetic division to simplify:

$$\frac{x^5 - 7x^4 + 2}{x - 3}$$

Prove whether or not $(x - 5)$ is a factor of $x^3 - 3x^2 - 3x - 35$ and write a sentence explaining your reasoning.

1) Describe the process of expanding the binomial, $(a + b)^n$ where a, b are any real number and n is a positive integer.

2) Describe the process of finding only the x^4 term of the expansion of the binomial, $(x + y)^p$ where p is a positive integer greater than 4.