

You must provide complete answers to the following questions. Correct answers without supporting work will receive minimal credit.
Good luck.

Divide. Write with positive exponents.

$$1) \frac{-9x^5 - 9x^3 - 15x^7}{-3x^5}$$

1) _____

Divide the first polynomial by the second using synthetic division and state the quotient and the remainder.

$$2) 2x^3 + 3x^2 + 4x - 10, x + 1$$

2) _____

Divide.

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

3) _____

Use the remainder theorem to find the remainder when $f(x)$ is divided by the given $x - k$. Do not actually perform the division.

4) $f(x) = 3x^4 + 6x^3 - 8x^2 + 8x + 3$; $x + 3$

4) _____

The graph of either a cubic or quartic polynomial $f(x)$ with leading coefficient ± 1 and integer zeros is shown. Write the complete factored form of $f(x)$.

5)

5) _____

