

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use long division to find the quotient and the remainder

1) $\frac{10x^3 - 19x^2 + 8x + 7}{-2x + 3}$ 1) _____

2) $\frac{x^4 + 5x^3 - 2x^2 - 15x + 27}{x^2 + 4x - 3}$ 2) _____

3) $\frac{x^3 + 8}{x + 2}$ 3) _____

Use synthetic division to find the quotient and the remainder.

4) $\frac{2x^3 + 3x^2 + 4x - 10}{x + 1}$ 4) _____

5) $\frac{x^3 - 4}{x - 1}$ 5) _____

6) $\frac{2x^4 + 5x^2 - 1}{x - \frac{1}{3}}$ 6) _____

Use synthetic division to find the function value.

7) $f(x) = 2x^3 - 4x^2 + 4x + 3$; find $f(-3)$ 7) _____

8) $f(x) = 5x^5 - 2x^4 + 2x^3 - x + 3$; find $f(4)$. 8) _____

9) $f(x) = -8x^3 + 16x^2 - 8x$; find $f\left(\frac{1}{2}\right)$ 9) _____

Using synthetic division, determine whether the numbers are zeros of the polynomial.

10) 2, -3; $f(x) = x^3 - 6x^2 - 13x + 42$ 10) _____

11) 4, 3; $f(x) = x^3 - 8x^2 + 21x - 18$ 11) _____

Find the requested polynomial.

12) Find a polynomial function of degree 3 with -1, 2, 4 as zeros. 12) _____

13) Find a polynomial function of degree 3 with $1 + 5i$, $1 - 5i$, -1 as zeros. 13) _____

14) Find a polynomial function of degree 3 with -8, 0, $\frac{1}{2}$ as zeros. 14) _____