

10.30 Classwork (QUIZ PRACTICE)**State the possible roots. Then find all linear factors and zeros.**

1) $f(x) = 4x^3 - 3x^2 - 9x - 2$

2) $f(x) = x^3 - 7x^2 + 2x + 40$

3) $f(x) = x^3 - 5x^2 - 18x + 72$

4) $f(x) = 2x^3 - x^2 - 15x + 18$

Describe the end behavior of each function.

5) $f(x) = -x^5 + 4x^3 - 2x - 1$

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

Divide Using LONG DIVISION.

7) $(2v^3 - 4v^2 - 68v - 10) \div (v - 7)$

8) $(n^3 + 12n^2 + 32n - 21) \div (n + 7)$

Evaluate each function at the given value using the REMAINDER THEOREM.

9) $f(a) = -6a^3 + 30a^2 - 19a - 15$ at $a = 4$

10) $f(m) = 6m^4 - 20m^3 + 3m^2 + 9m + 8$ at $m = 3$

Using the FACTOR THEOREM, state if each is a factor of the polynomial.

11) $(x^3 - 2x^2 - 62x - 14) \div (x - 9)$

12) $(7n^3 + 33n^2 - 63n - 54) \div (n + 6)$