

1. Use the Remainder Theorem to find the remainder when $f(x) = 4x^3 - 3x^2 - 8x + 4$ is divided by $x - 2$.

- a) 4 b) -2 c) -24 d) 8 e) 0

2. Use the Factor Theorem to determine whether $x - 2$ is a factor of $f(x) = 3x^4 - 6x^3 - 5x + 10$.

- a) is a factor b) is NOT a factor c) can not determine

3. Use the Factor Theorem to determine which of the following is a factor of $f(x) = x^3 + 2x^2 - 5x - 6$.

- a) $x - 3$ b) $x - 1$ c) $x + 1$ d) $x + 2$ e) $x + 5$

4. Use your answer from #3 above to completely factor $f(x) = x^3 + 2x^2 - 5x - 6$.

- a) $f(x) = (x + 3)(x + 1)(x - 2)$ b) $f(x) = (x - 3)(x - 1)(x + 2)$
c) $f(x) = (x + 3)(x - 1)(x + 2)$ d) $f(x) = (x - 3)(x + 1)(x - 2)$