Remainder Theorem and Factor Theorem

Name _____

Date _____ Period _____

Remainder Theorem:

If polynomial $f(x)$ is divided by $(x - b)$, then the remainder is equal to $f(b)$.

Given $f(x) = 2x^3 - x^2 + 2x - 3$, find the remainder when $f(x)$ is divided by...

$x - 4$ $x + 3$

Factor Theorem:

1. If $f(b) = 0$, then $(x - b)$ is a factor of polynomial $f(x)$.
2. If $(x - b)$ is a factor of polynomial $f(x)$, then $f(b) = 0$.

Given $f(x) = 2x^3 - x^2 + 2x - 3$, determine if the following are factors of $f(x)$.

$x - 1$ $x + 2$

Remainder Theorem:

If polynomial $f(x)$ is divided by $(x - b)$, then the remainder is equal to $f(b)$.

Factor Theorem:

1. If $f(b) = 0$, then $(x - b)$ is a factor of polynomial $f(x)$.
2. If $(x - b)$ is a factor of polynomial $f(x)$, then $f(b) = 0$.