Precalculus

2-05 Rational Zeros of Polynomial Functions

Remainder Theorem

If *f*(*x*) is divided by $(x-k)$**, then the remainder is** $r=f(k)$

Use the remainder theorem to evaluate $f(x)=4x^3+10x^2-3x-8$ for $f(-1)$.

Rational Zero Theorem

If polynomial

$$f(x)=a_nx^n+a_{n-1}x^{n-1}+\cdots+a_2x^2+a_1x+a_0$$

The rational zeros are in the form $\frac{p}{q}$

where *p* = factors of a_0

q **= factors of** a_n

Find the rational zeros of $f(x)=x^3-5x^2+2x+8$ given that $x+1$ is a factor.

Find the real zeros of $f(x)=x^3-7x^2-11x+14$ given that $x+2$ is a factor.