BUILD-A-polynomial WORKSHOP

Find a polynomial in standard form with the following attribute(s). All coefficients need to be integers. After you build the polynomial, check your build on Desmos and make note of the attributes it has.

zeros: $x=-3;\ \text{mult:}2,\ x=4$

The ***fully factored form*** of f(x) is:

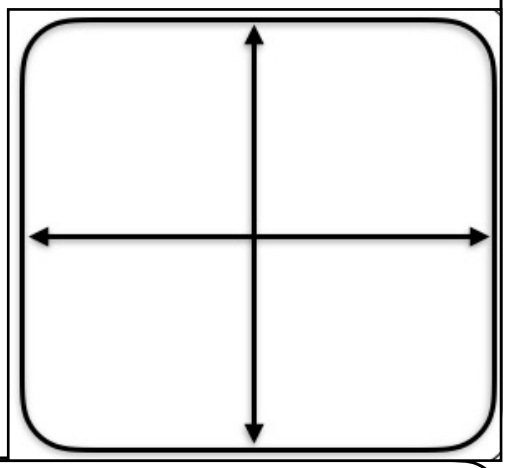
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

The ***end behavior*** of the polynomial is…

$\text{if } x\to\infty \text{ then } y\to$ _____

$\text{if } x\to-\infty \text{ then } y\to$ _____



zeros: $x=-\sqrt{3},\ x=0;\ \text{mult:}2$

The ***fully factored form*** of f(x) is:

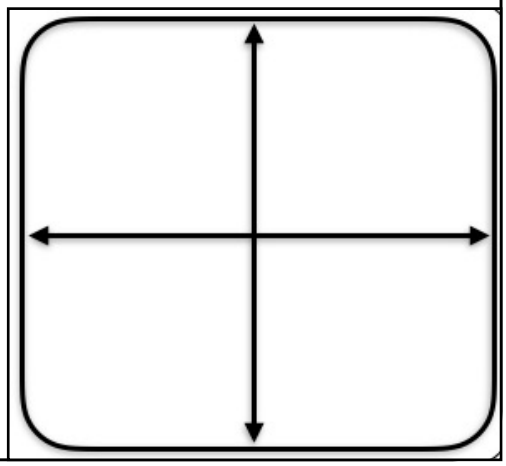
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

The ***end behavior*** of the polynomial is…

$\text{if } x\to\infty \text{ then } y\to$ _____

$\text{if } x\to-\infty \text{ then } y\to$ _____



zeros: $x = 2 - \sqrt{5},\ x = 1$

The ***fully factored form*** of f(x) is:

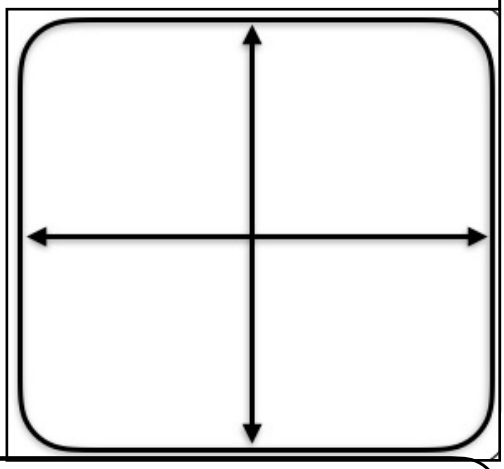
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

The ***end behavior*** of the polynomial is…

$\text{if } x \to \infty \text{ then } y \to$ _____

$\text{if } x \to -\infty \text{ then } y \to$ _____



zeros: $x = -2i,\ x = \sqrt{2}$

The ***fully factored form*** of f(x) is:

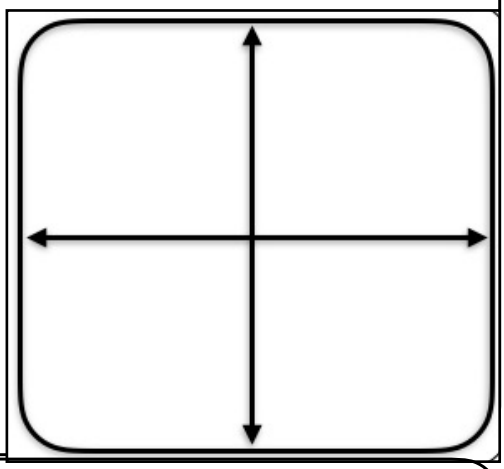
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

The ***end behavior*** of the polynomial is…

$\text{if } x \to \infty \text{ then } y \to$ _____

$\text{if } x \to -\infty \text{ then } y \to$ _____



zeros: $x = -4i,\ x = 0;\ \text{mult:}3$

The ***fully factored form*** of f(x) is:

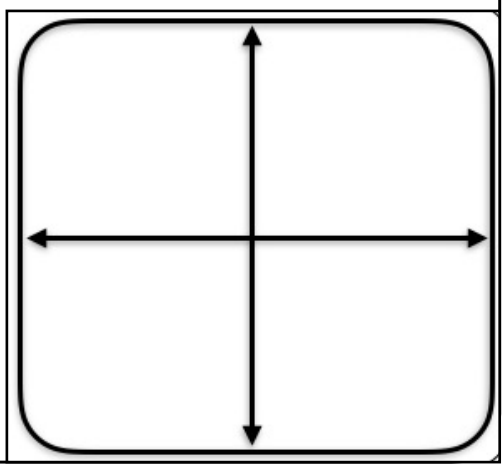
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

The ***end behavior*** of the polynomial is…

$\text{if } x \to \infty \text{ then } y \to$ _____

$\text{if } x \to -\infty \text{ then } y \to$ _____



zeros: $x = i,\ x = 3i$

The ***fully factored form*** of f(x) is:

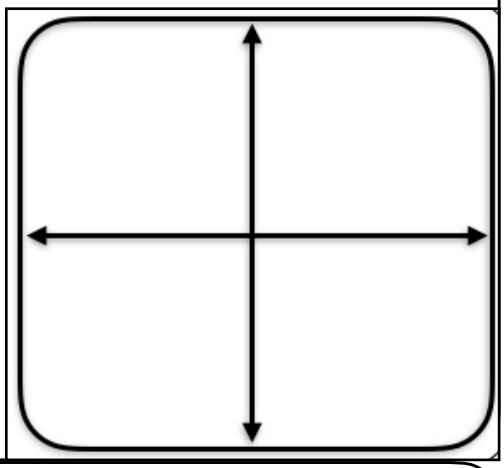
The ***x-intercepts*** are:

The ***y-intercept*** of the polynomial is:

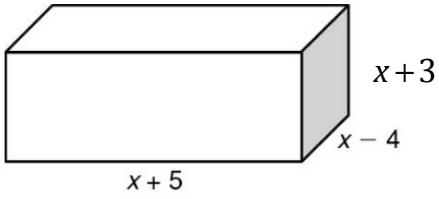
The ***end behavior*** of the polynomial is…

if $x \to \infty$ then $y \to$ _____

if $x \to -\infty$ then $y \to$ _____



Write a polynomial to represent the volume of the rectangular prism.



The ***fully factored form*** of f(x) is:

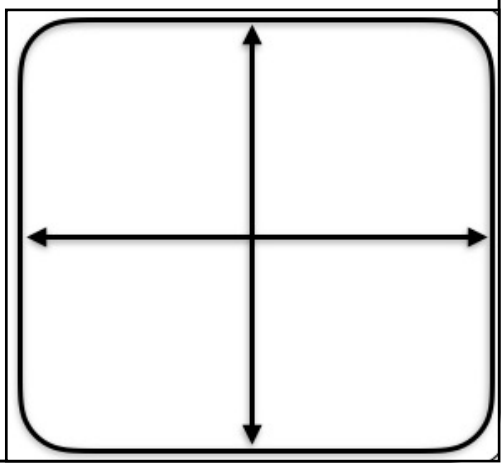
The ***x-intercepts*** are:

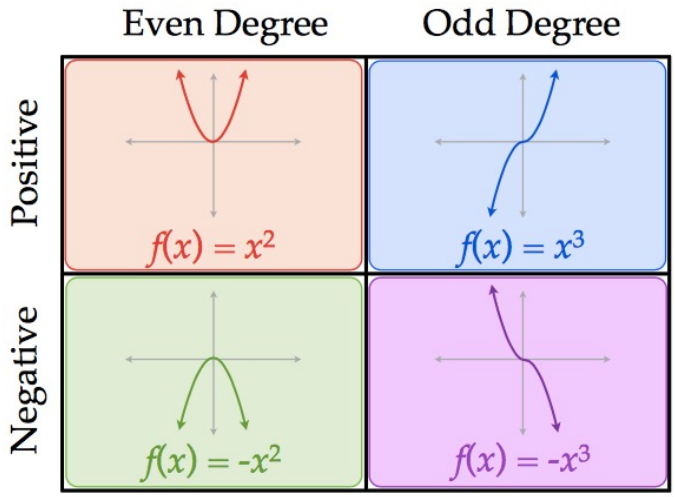
The ***y-intercept*** of the polynomial is:

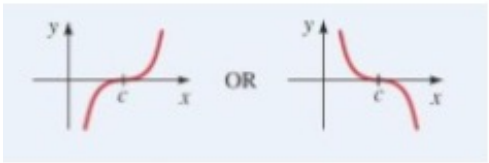
The ***end behavior*** of the polynomial is…

if $x \to \infty$ then $y \to$ _____

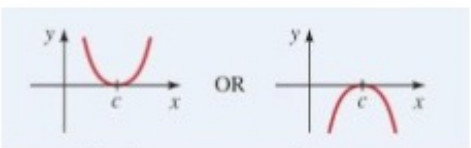
if $x \to -\infty$ then $y \to$ _____







Graph behavior around x-intercept for or odd multiplicities



Graph behavior around x-intercept for or even multiplicities