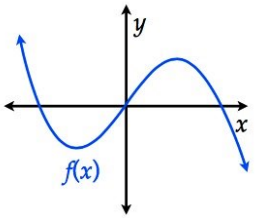
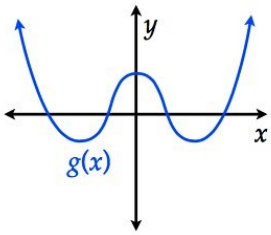
Skills and Vocabulary

Circle the correct attribute that could model a function given



The leading coefficient must be:
POSITIVE or **NEGATIVE**

The degree must be:
EVEN or **ODD**



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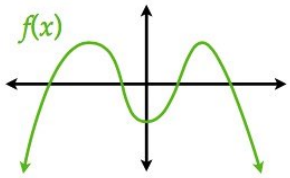

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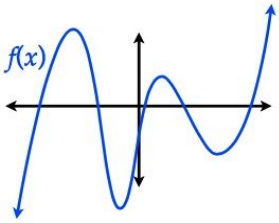

The leading coefficient must be:
POSITIVE or **NEGATIVE**

The degree must be:
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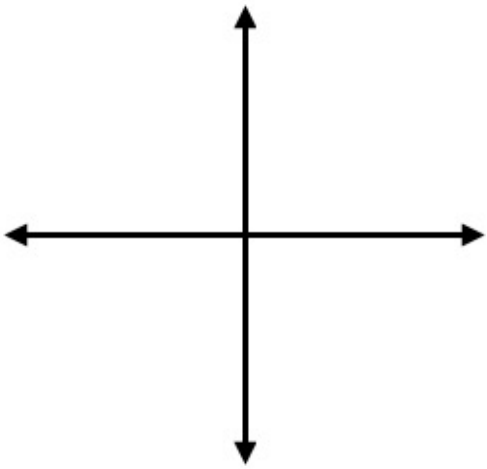
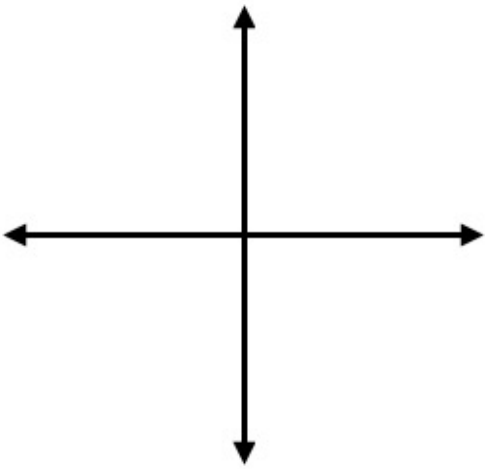
Sketch a possible polynomial with all integer coefficients given the attributes listed



The polynomial the following ***zeros***
x = 3; multiplicity 2
x = -2

The polynomial also has a ***positive y-intercept***

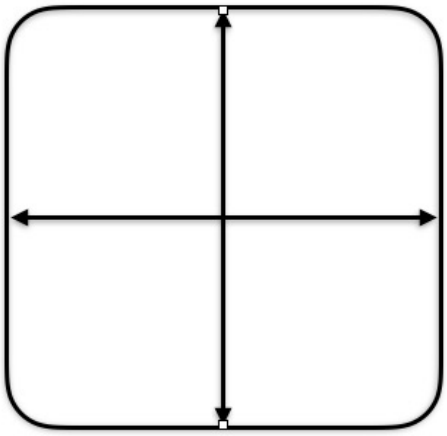


The polynomial the following ***zeros***
x = 0; multiplicity 3

x = $\sqrt{10}$

The polynomial also has a ***negative leading coefficient.***

$y = x^4 - 6x^3 - 7x^2$



The ***zeros*** are:

_____

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

_____

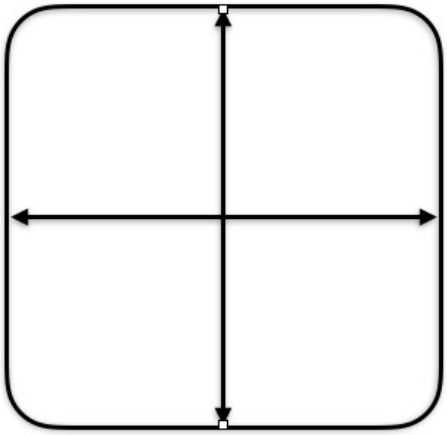
The ***y-intercept*** of the polynomial is: _____

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

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

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

$y = 4x^3 - 17x^2 - 15x$



The ***zeros*** are:

_____

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

_____

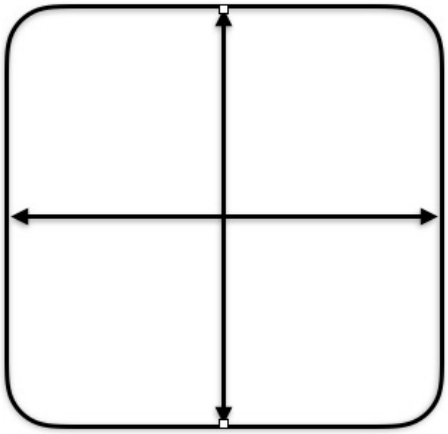
The ***y-intercept*** of the polynomial is: _____

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

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

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

$y = 2x^5 - 50x^3$



The ***zeros*** are:

_____

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

_____

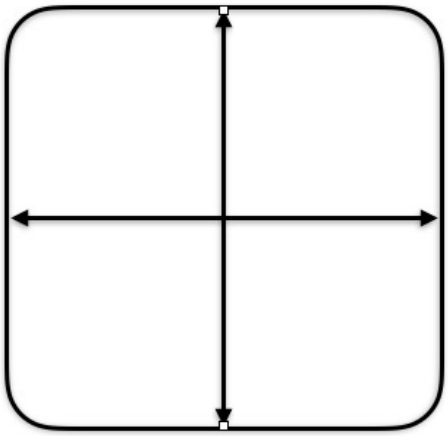
The ***y-intercept*** of the polynomial is: _____

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

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

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

$y = -2x^4 - 3x^3 + 4x^2$



The ***zeros*** are:

_____

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 $y \to$ _____

The following polynomials are in FACTORED FORM. Answer the questions and sketch a reasonable graph

$$y=-\left(2x-5\right)\left(x+7\right)^4$$

The ***zeros*** are:

_____

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

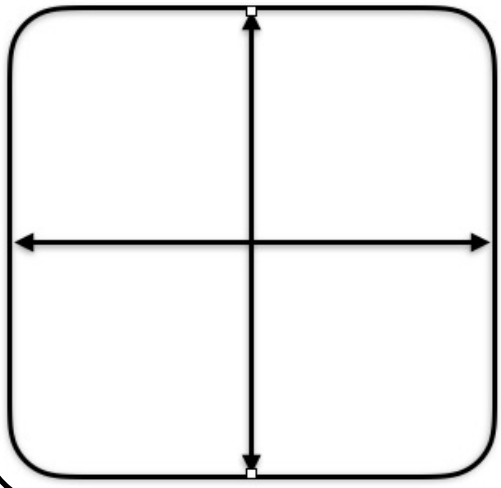
_____

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 $y\to$ _____



$$y=x^3\left(2x-5\right)\left(x+5\right)^2$$

The ***zeros*** are:

_____

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

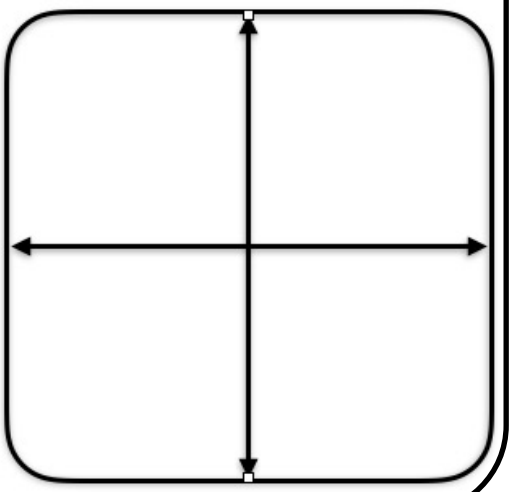
_____

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 $y\to$ _____



For each of the following below, build a polynomial with ALL integer coefficients and has the characteristics described.

Zeros:

$x=3$; mult 2

$x=-5$

Zeros:

$x=1$

$x=\sqrt{7}$

Zeros:

$x=0$; mult 3

$x=-4i$

Find the Quotient of the following using the technique as described.

long division

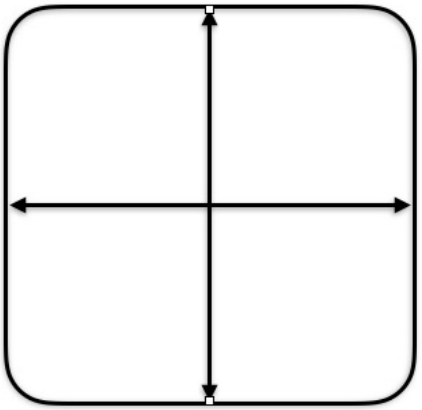
$$\frac{2x^3-9x^2+15}{2x-5}$$

synthetic division

$$\frac{3x^4-2x^2+4}{x+1}$$

COMPLETELY FACTOR THE FOLLOWING GIVEN FACTOR PROVIDED. THEN MAKE A SKETCH BASED ON THE FACTORED FORM

$f(x)=x^3+5x^2-8x-48$ given (x + 4) if a factor.



$f(x)=-x^4-5x^3-2x^2+8x$ given (x + 2) if a factor.