rewrite f(x) in factored form and find all zeros. Then sketch the graph. Show all work.

$f(x) = x^4 - 4x^3 - 6x^2 + 36x - 27$ has a factor of $(x - 3)$ with multiplicity two.

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

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 $y \to$ _____

$f(x) = 2x^3 - 3x^2 - 14x + 15$ has factors of $(x - 1)$ and $(x - 3)$.

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

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 $y \to$ _____

$f(x) = -x^5 + 7x^4 - 9x^3 - 27x^2 + 54x$ has a factor of $(x - 3)$ with multiplicity 3.

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

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 $y \to$ _____