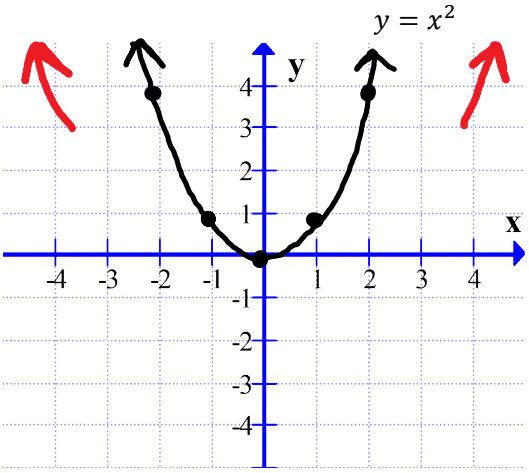
C12 - 3.4 - End Behaviour Polynomials Notes

Leading Term
Table of Values

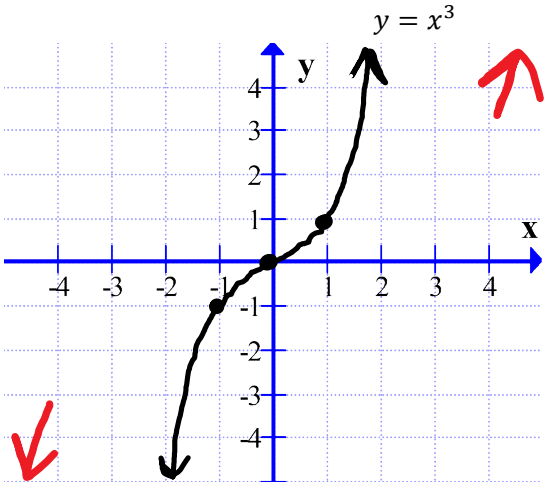
$+\#x^{even}$



Q2,Q1

x	y
-10	+
+10	+

$+\#x^{odd}$

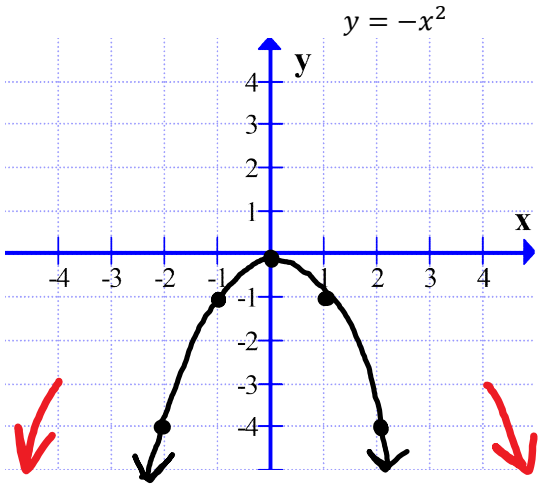


Q3,Q1

x	y
-10	-
+10	+

$y \geq \#$	
Range	yER
$y \leq \#$	

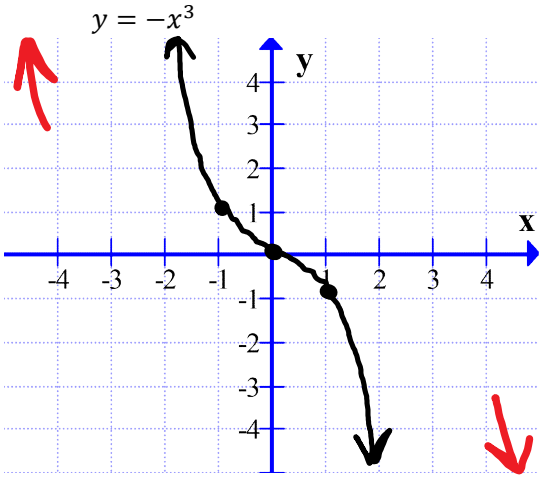
$-\#x^{even}$



Q3,Q4

x	y
-10	-
+10	-

$-\#x^{odd}$

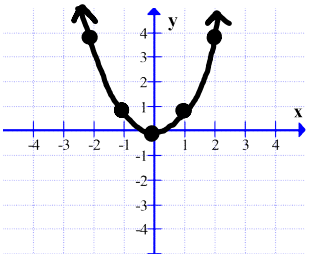


Q2,Q4

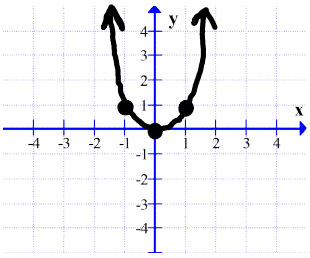
x	y
-10	+
+10	-

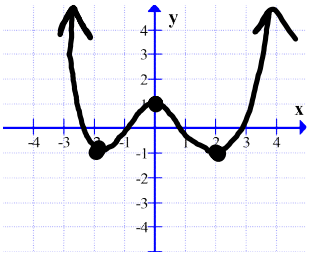
C12 - 3.4 - End Behaviour Polynomials Notes

Leading Term
Table of Values

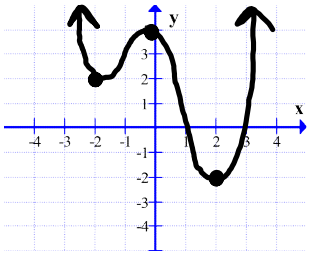


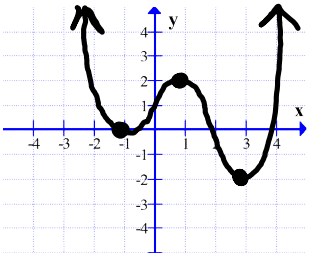
$y = x^2$

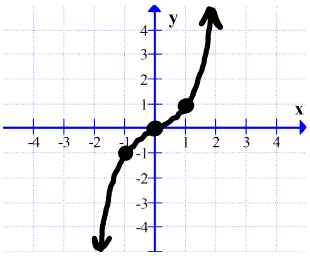




$y = x^4$ ...

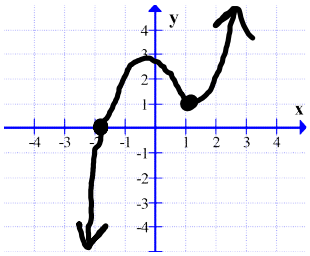


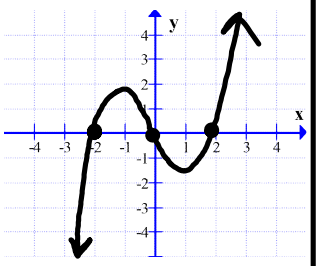


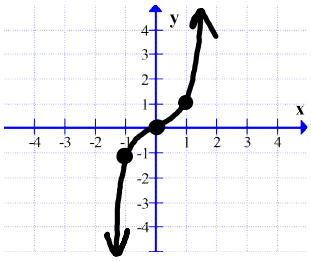


$y = x^3$

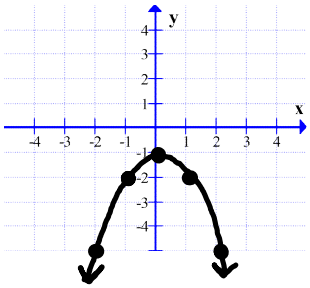
$y = x^3$ ...



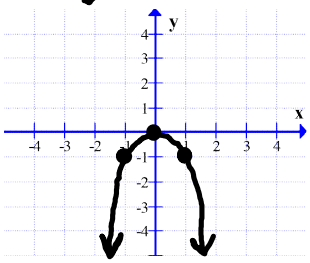




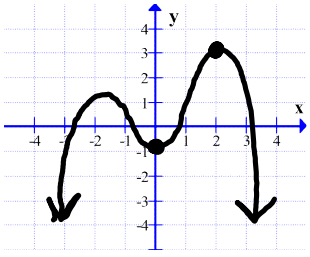
$y = x^5$



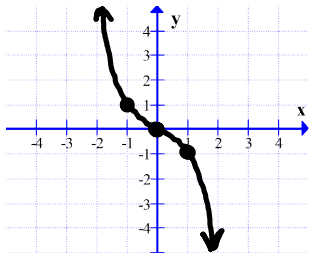
$y = -x^2$



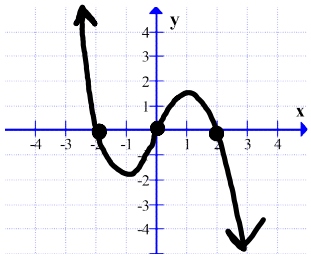
$y = -x^4$



$y = -x^4$ ...

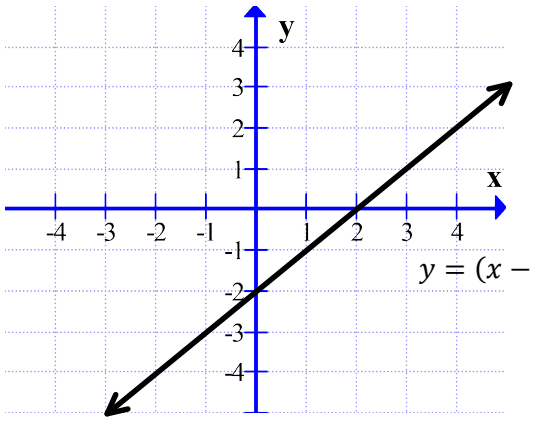


$y = -x^3$



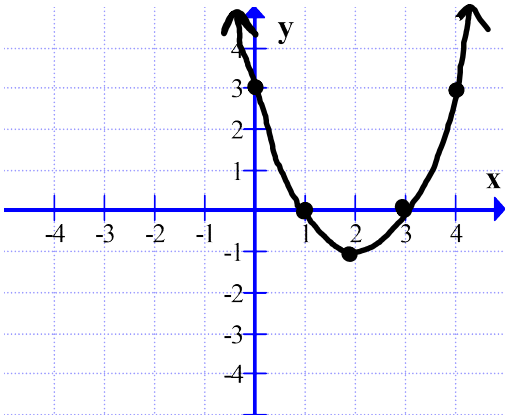
$y = -x^3$ ...

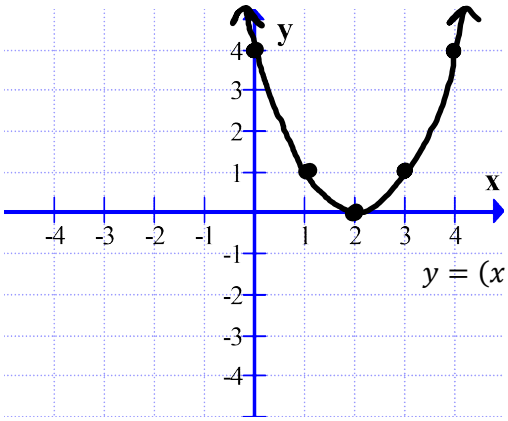
C12 - 3.4 - Multiplicity (Factor Exponents) Graph Notes



$y = (x-2)^1$

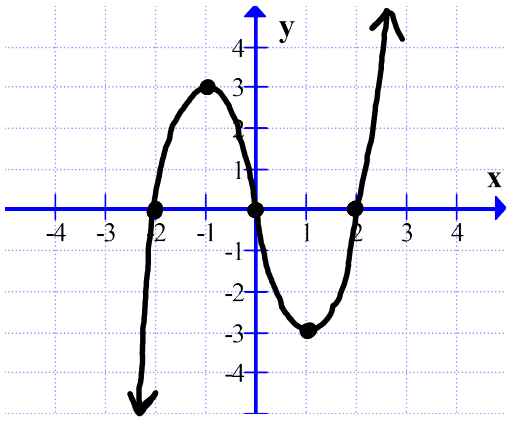
$y = (x-1)^1(x-3)^1$

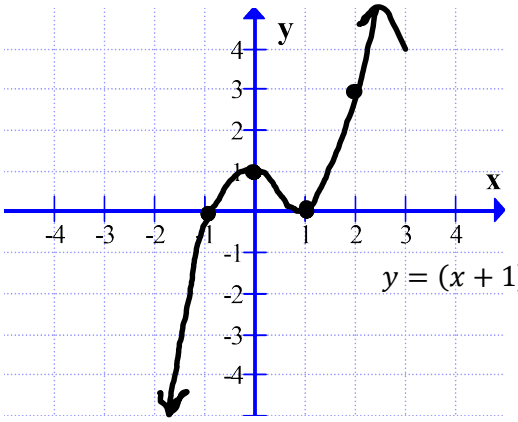




$y = (x-2)^2$

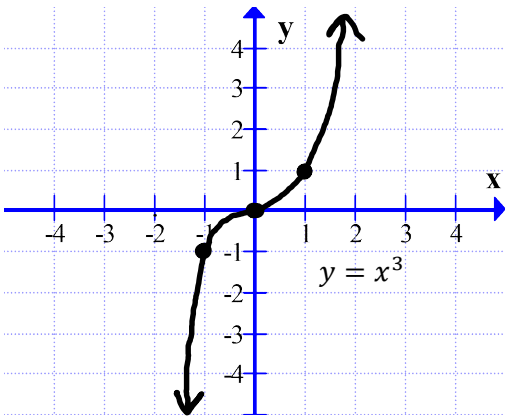
$y = x^1(x-2)^1(x+2)^1$



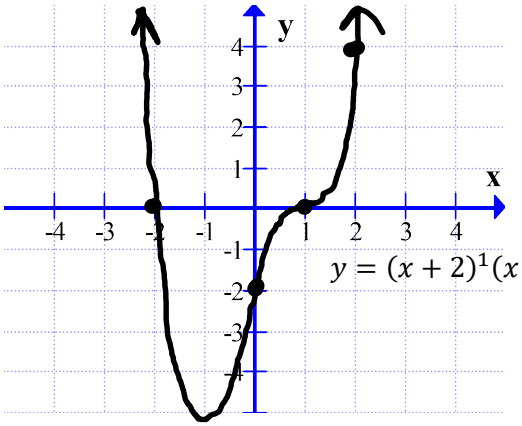


$y = (x+1)^1(x-1)^2$

Degree 1: *Straight through* $x-$ *intercept*
Degree 2: *Bounce off* $x-$ *intercept*
Degree 3: *Chair Shape through* $x-$ *intercept*

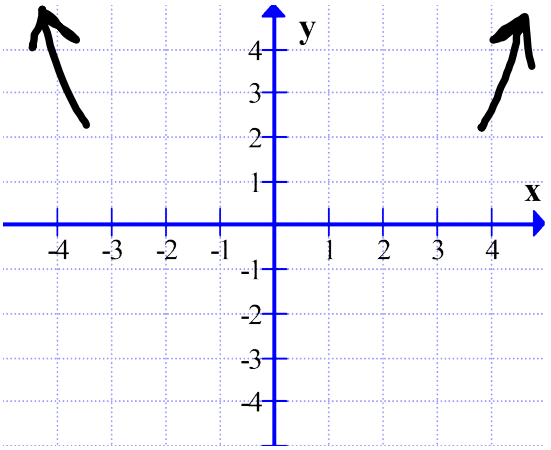


$y = x^3$



$y = (x+2)^1(x-1)^3$

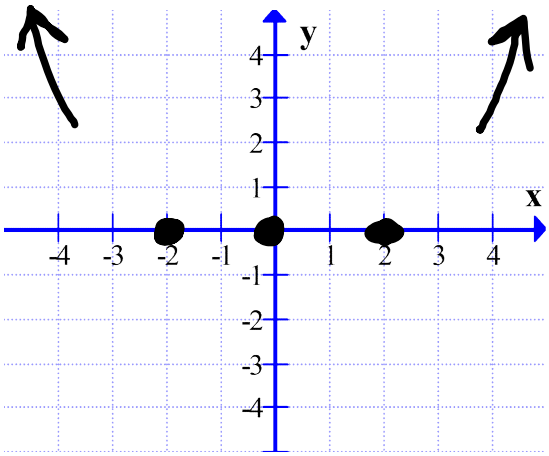
C12 - 3.4 - Graph $y = x(x-2)^2(x+2)^3$ Notes



$y = x(x-2)^2(x+2)^3$

1) *End Behavior*

$y = x(x-2)^2(x+2)^3$
$y = x(x)^2(x)^3$
$y = +x^6$ → $y = +x^{even}$
Q3,Q1



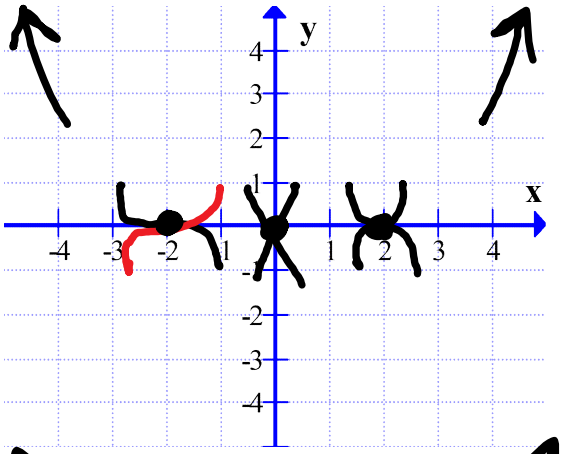
2) $x-intercepts, y\ intercept$

$x - 2 = 0$
$x = 2$
(0,2)

$x = 0$
(0,0)

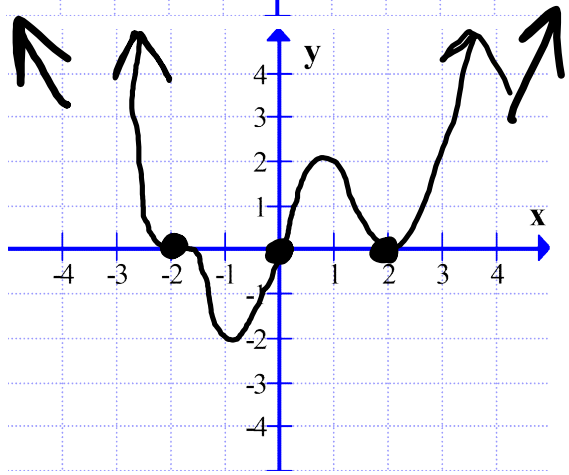
$x + 2 = 0$
$x = -2$
$(0, -2)$

$y = x(x-2)^2(x+2)^3$
$y = 0(0-2)^2(0+2)^3$
$y = 0(-2)^2(2)^3$
$y = 0(-1)(8)$
$y = 0$
y-int: (0,0)



3) *Multiplicity*

$(x-2)^2$	x^1	$(x+2)^3$
$x = 2$	$x = 0$	$x = -2$
Degree 2	*Degree 1*	*Degree 3*
$U-shape$	*Straight through*	*Chair shape*



4) *Graph*

$y = x(x-2)^2(x+2)^3$

Start from an arrow
Chair at $x = -2$
Straight through at $x = 0$
Bounce at $x = 2$
End at an arrow