

Name: _____

Accelerated Algebra 1

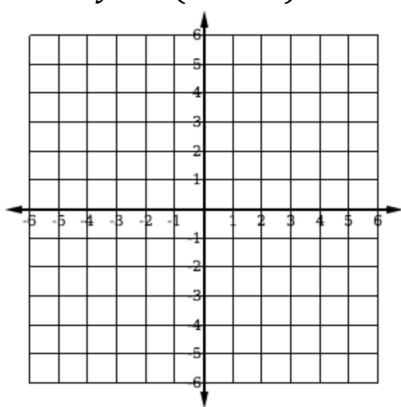
Polynomial Graphing Lab Exploration with Desmos

You will be following along with the Desmos activity and using this to sketch your graphs and answer questions. Class Code: _____

In Desmos, read Screens 1 - 3. Starting with Screen 4, you will enter your equation into Desmos and then sketch it here. Answer the properties on your paper. Answer the questions on the next Screen in Desmos. Look for patterns - similarities and differences along the way.

Screen 4: **Graph A**

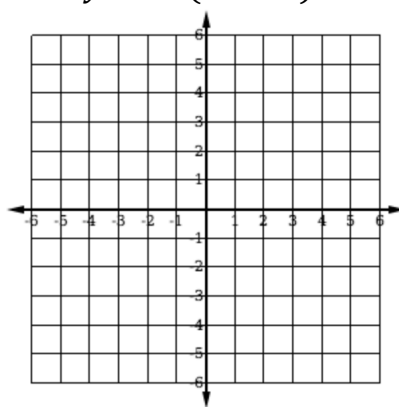
$$y = (x - 0)^1$$



Degree of poly: _____
X-intercept as point: _____
as $x \rightarrow -\infty$, $y \rightarrow$ _____
as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 6: **Graph B**

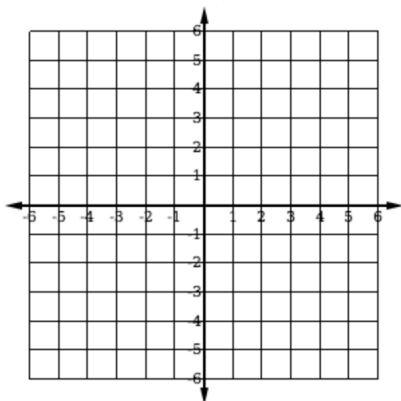
$$y = -(x - 0)$$



Degree of poly: _____
X-intercept as point: _____
as $x \rightarrow -\infty$, $y \rightarrow$ _____
as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 8: **Graph C**

$$y = (x)^2$$



Degree of poly: _____

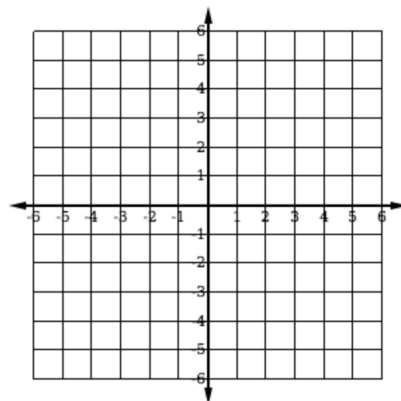
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 11: **Graph D**

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



Degree of poly: _____

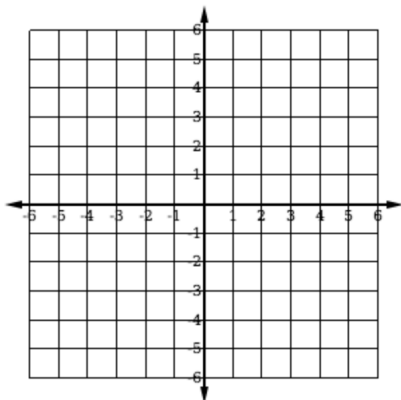
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 13: **Graph E**

$$y = (x)^3$$



Degree of poly: _____

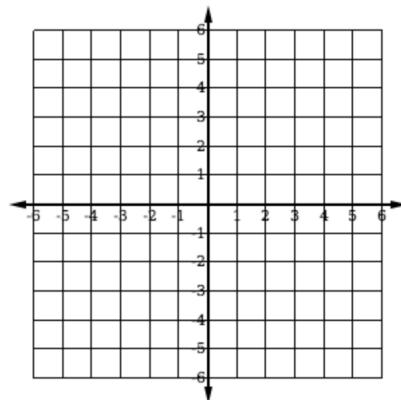
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 16: **Graph F**

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



Degree of poly: _____

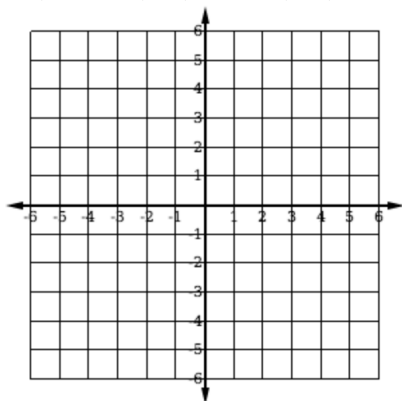
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 18: **Graph G**

$$y = (x - 0)^1(x + 2)^1(x - 1)^1$$



Degree of poly: _____

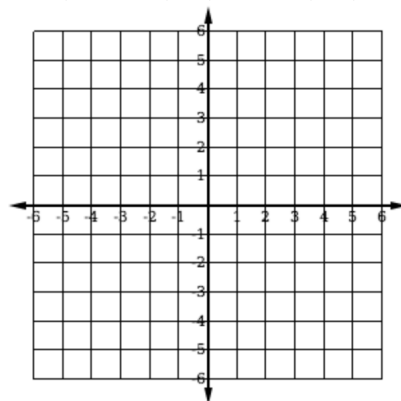
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 21: **Graph H**

$$y = -(x - 0)^1(x + 2)^1(x - 1)^1$$



Degree of poly: _____

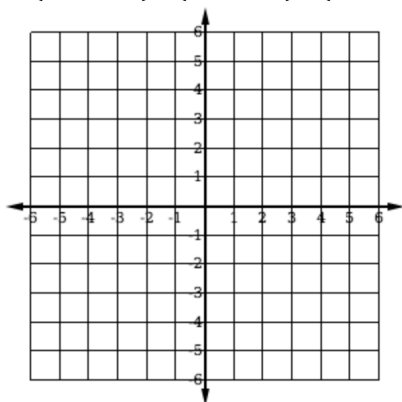
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 23: **Graph I**

$$y = (x - 0)^2(x + 2)^1(x - 1)^1$$



Degree of poly: _____

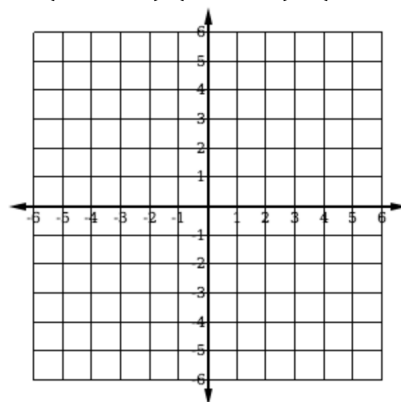
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 26: **Graph J**

$$y = (x - 0)(x + 2)^2(x - 1)^2$$



Degree of poly: _____

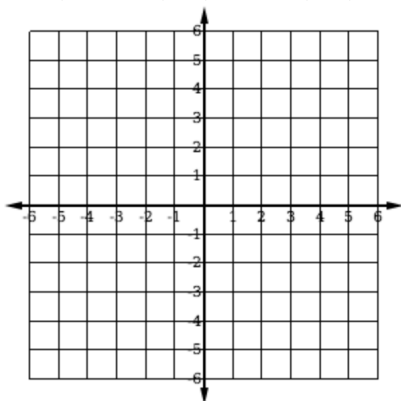
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 28: **Graph K**

$$y = -(x - 0)^2(x + 2)^2(x - 1)^1$$



Degree of poly: _____

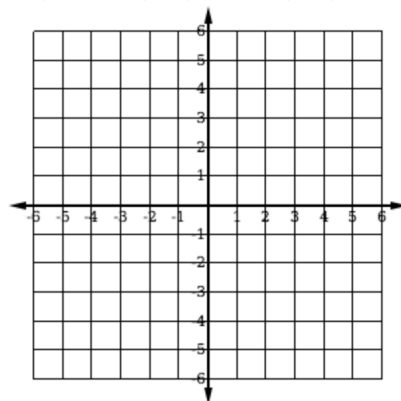
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 29: **Graph L**

$$y = (x - 0)^2(x + 2)^2(x - 1)$$



Degree of poly: _____

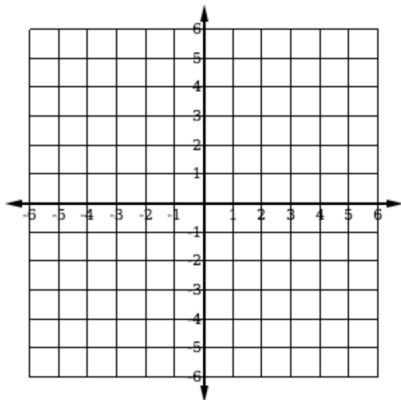
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 23: **Graph M**

$$y = -x^2(x - 5)^2$$



Degree of poly: _____

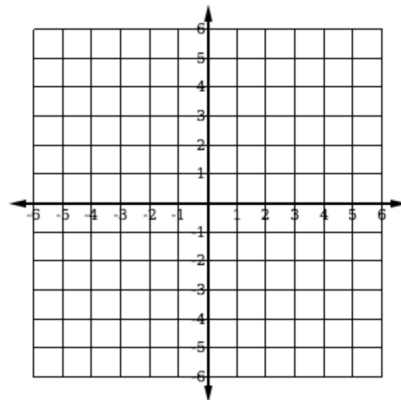
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 41: **Graph N**

$$y = (x - 1)^4(x + 3)^2$$



Degree of poly: _____

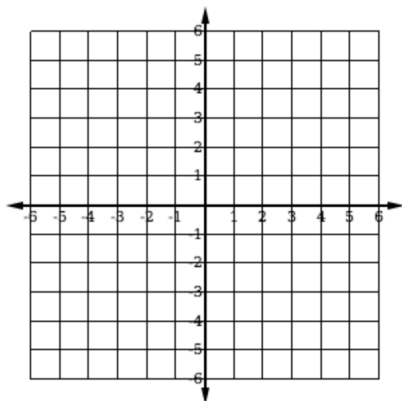
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 44: **Graph O**

$$y = x^4 - 8x^2 + 16$$



Degree of poly: _____

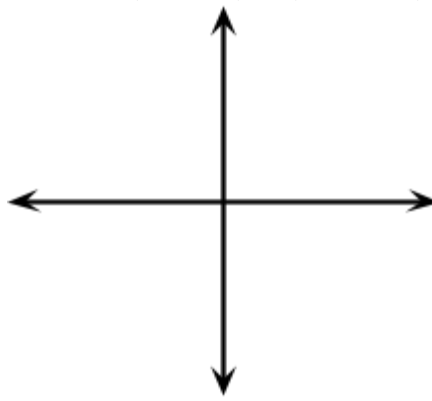
X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Screen 46: **Graph P**

$$y = x^{10}(x - 7)^{13}(x + 12)^6$$



Degree of poly: _____

X-intercept as point: _____

as $x \rightarrow -\infty$, $y \rightarrow$ _____

as $x \rightarrow \infty$, $y \rightarrow$ _____

Final Recap: What does each part of the equation determine about the graph?

<u>Leading Coefficient</u>	<u>Degree of Polynomial</u>	<u>Factors of Polynomial</u>	<u>Shape at X-axis</u>
Positive:	Even:		() ¹
Negative:	Odd:		() ²
			() ³