

Name: _____

Period: _____

Algebra 2
Chapter 5: Polynomials

Target	Learning Targets	Got it	Ok	No way
T 5-1	I can perform operations on polynomials expressions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T 5-2	I can perform long and synthetic division on polynomial expressions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T 5-3	I can evaluate polynomial expressions, explaining the end behavior and state the number of real zeros.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T 5-4	I can locate the zeros, relative maxima and minima of a polynomial on a graphing calculator. I can use this information to sketch a graph.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T 5-5	I can identify zeros and intercepts from a graph or an equation and use this information to write an equation or graph a polynomial.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date	Lesson/Activity	Homework Assignment o = only do odd problems	Turned In?
T 5-1	5.1 Operations with Polynomials Review Exponent Properties	5.1 Pg. 307 # 16-23 & 41-50 ALL	
T5-1 T5-2	5.1 Operations with Polynomials 5.2 Synthetic Division	5.1 Pg. 307 #29-39o, 53-59o 5.2 Pg 315 #21-31o, 37-41o (synthetic)	
T 5-2	5.2 Dividing Polynomials Long Division	5.2 Pg 315 #21-31o, 37-41o Yes, they are the same, use long division!	
T 5-3	5.3 Polynomial Functions	5.3 Pg. 326 #13-41o 51, 52 and WKST	
T 5-4	5.4 Analyzing Graphs of Polynomials Using a calculator	5.4 WKST	
T 5-5	Write an equation from a graph Sketch a Graph from a factored equation.	T5-5 WKST	
	Chapter 5 Review	Review Pg. 374 #11-32	
	Chapter 5 Test	All homework must be turned in before test to be eligible for retakes	

Transformation Unit Retake Problems

Target	I can...	Problems
TU-1	I can interpret graphs that model real world scenarios.	Interpreting Graphs WKST
TU-2	I can identify functions and use function notation	Function Notation WKST
TU-3	I can transform equations and explain the motion.	Describing Transformations WKST
TU-4	I can graph equations that have been transformed.	Graphing Transformations WKST
TU-5	I can write the equation of linear, quadratic, square root, and absolute value graphs.	Writing Equations from a Graph WKST

Complete the following Retake Worksheets to retake. Check your answers with me and correct your test!

Property	Definition	Examples	You Try
ADDING & SUBTRACTING MONOMIALS	COMBINE LIKE TERMS!!!!!! DO NOT CHANGE COMMON VARIABLES OR EXPONENTS!		
PRODUCT PROPERTY	$a^n a^m =$		
QUOTIENT PROPERTY	$\frac{a^n}{a^m} =$		
NEGATIVE EXPONENTS	$a^{-1} =$ $\frac{1}{a} =$		
POWER OF POWER	$(a^m)^n =$		

Property	Definition	Examples	You Try
POWER OF A PRODUCT	$(ab)^n =$		
POWER OF POWER & POWER OF A PRODUCT	$(a^x b^y)^k =$		
POWER OF A QUOTIENT	$\left(\frac{a}{b}\right)^n =$		
ZERO POWER	$x^0 =$		

Graphing Polynomial Functions: Basic Shape

Describe the end behavior of each function.

1) $f(x) = x^3 - 4x^2 + 7$

2) $f(x) = x^3 - 4x^2 + 4$

3) $f(x) = x^3 - 9x^2 + 24x - 15$

4) $f(x) = x^2 - 6x + 11$

5) $f(x) = x^5 - 4x^3 + 5x + 2$

6) $f(x) = -x^2 + 4x$

7) $f(x) = 2x^2 + 12x + 12$

8) $f(x) = x^2 - 8x + 18$

State the maximum number of turns the graph of each function could make.

9) $f(x) = x^5 - 4x^3 + 5x + 1$

10) $f(x) = -x^2 - 1$

Sketch the general shape of each function.

11) $f(x) = -x^2 - 6x - 7$

12) $f(x) = x^3 - 2x^2 + 1$

13) $f(x) = x^2 + 2$

14) $f(x) = -x^4 + 3x^3 - 2 - 5x$

15) $f(x) = -x^5 + 4x^3 - x + 1$

16) $f(x) = x^3 - 2x^2 - 3$

17) $f(x) = -x^5 + 3x^3 + 2$

18) $f(x) = -x^3 + 10x^2 - 33x + 32$

T 5.4 Analyzing Graphs of Polynomials

Using a calculator sketch the following functions. Determine and label all x-intercepts, y-intercepts, local and relative maximums and minimums.

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

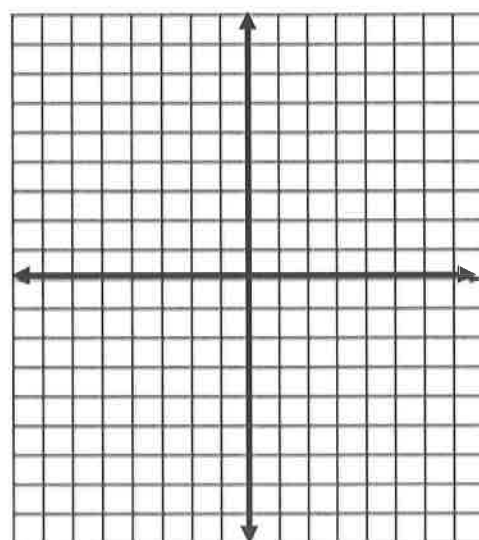
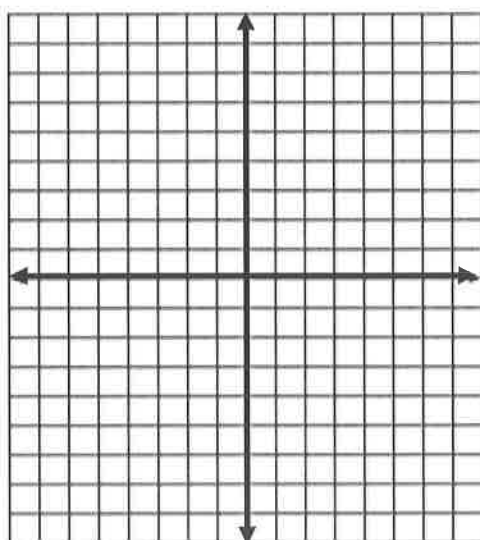
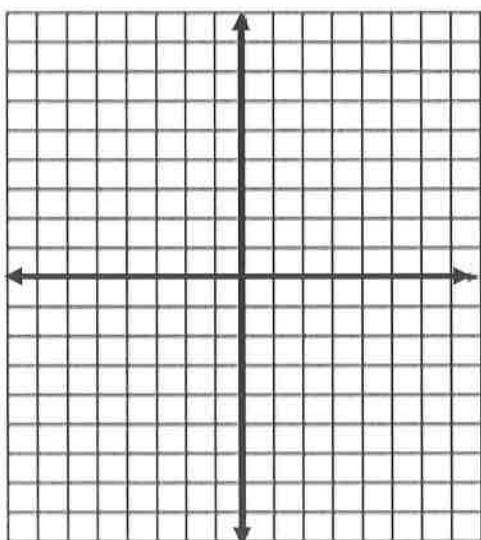
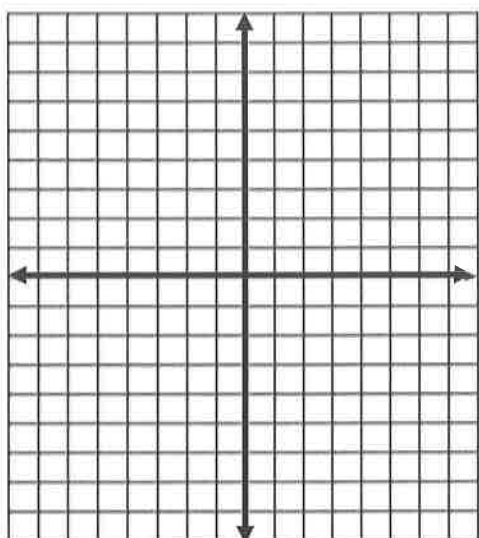
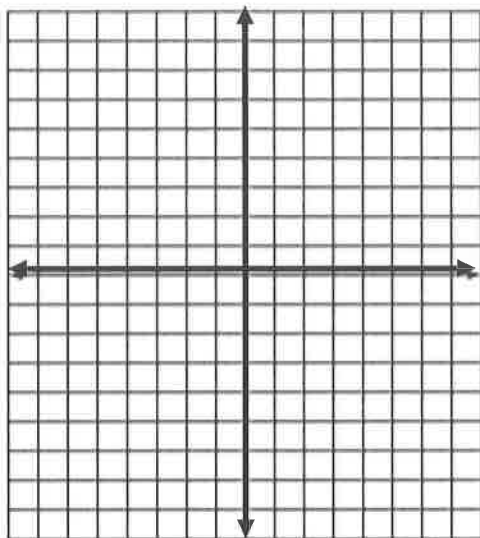
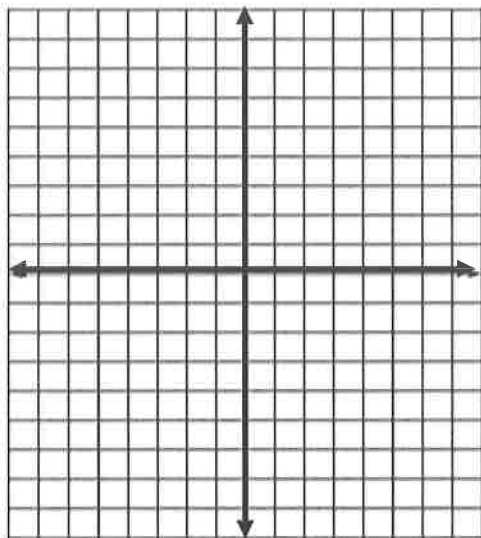
2. $f(x) = 2x^3 - 4x^2 - 3x + 4$

3. $f(x) = x^3 + 3x^2 - 6x - 6$

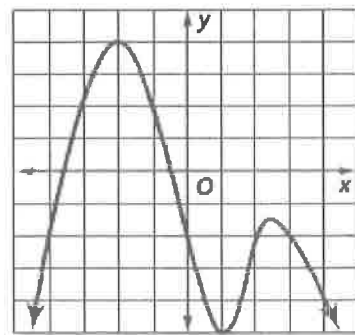
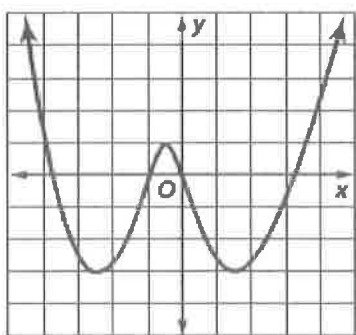
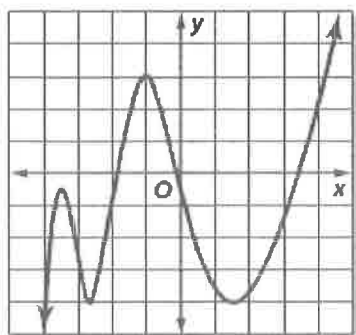
2. $f(x) = 2x^3 - 5x^2 + 3x + 1$

3. $f(x) = x^4 + 8x^2 - 12$

4. $f(x) = -2x^4 + 5x^3 - 4x^2 + 3x - 7$

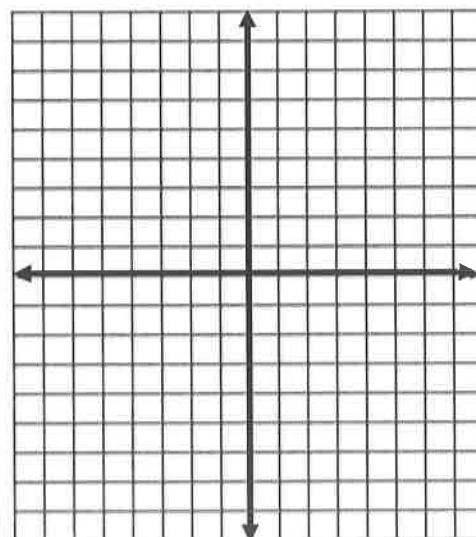
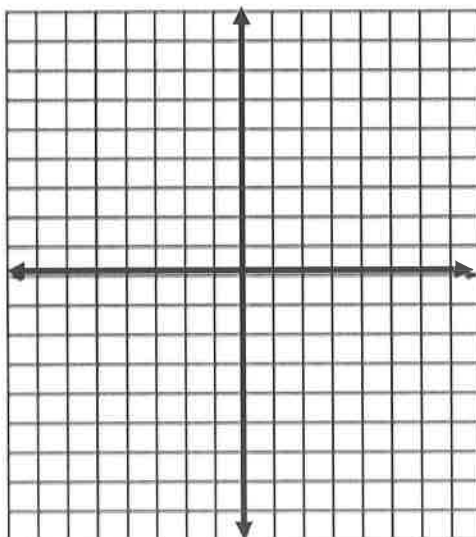
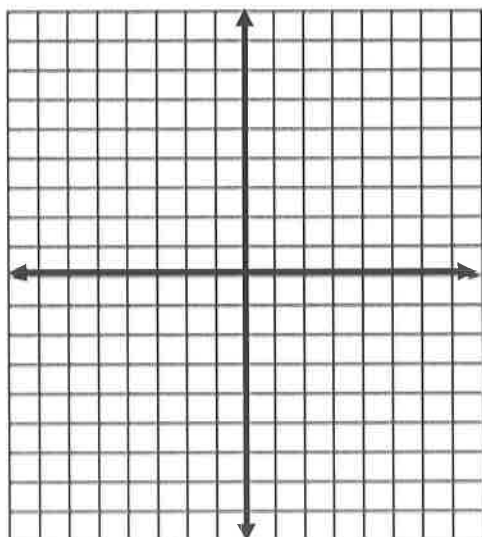
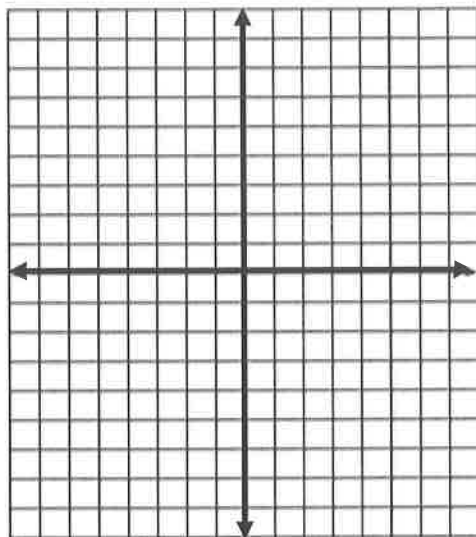
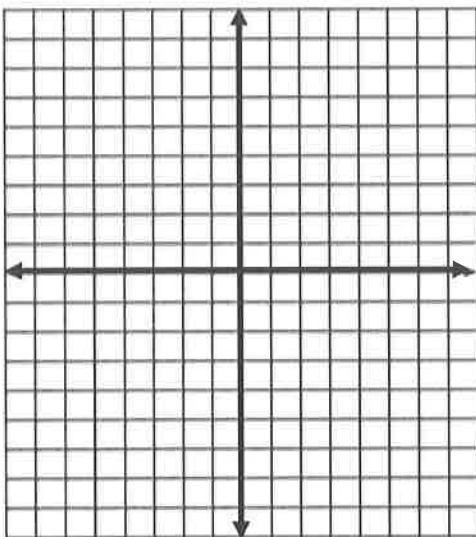
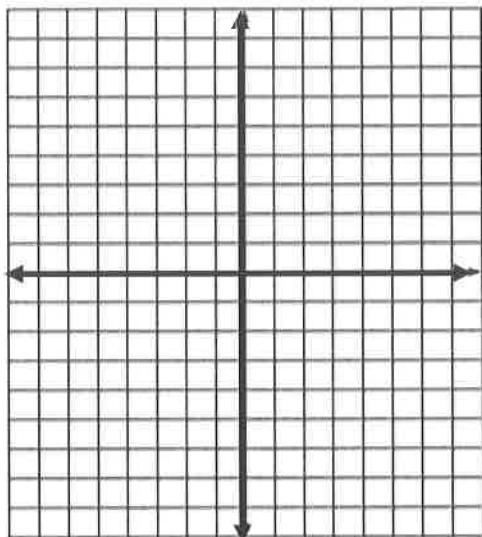


For the following estimate the every zero, y-intercept, local and relative minimums and minimums and determine the smallest possible degree of the function.

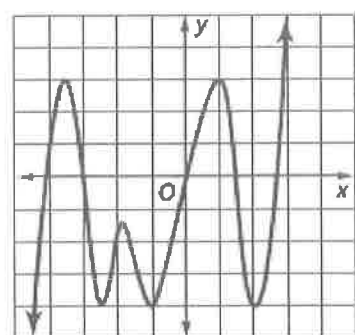
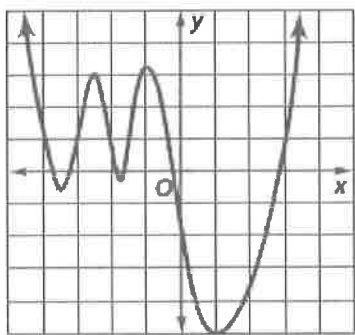
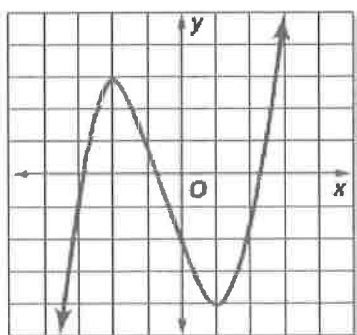


Sketch the graph of polynomial functions with the following characteristics.

4. An odd function with zeros at -5, -3, 0, 2 and 4.
5. An even function with zeros at -2, 1, 3 and 5.
6. A 4th-degree function with a zero at -3, maximum at $x = 2$, and minimum at $x = -1$.
7. A 5th-degree function with zeros at -4, -1, and 3, maximum at $x = -2$.
8. An odd function with zeros at -1, 2 and 5 and a negative leading coefficient.
9. An even function with a minimum at $x = 3$ and a positive leading coefficient.

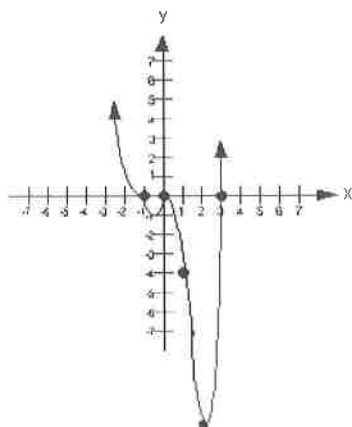


For the following estimate the every zero, y-intercept, local and relative minimums and minimums and determine the smallest possible degree of the function.

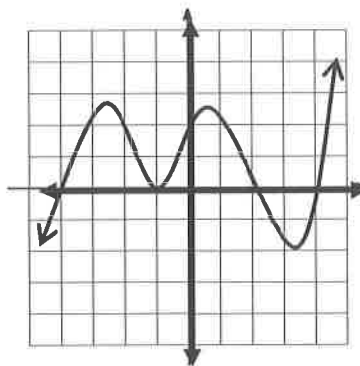


Identify the zeroes and y-intercept for each graph and then write the equation in factored form.

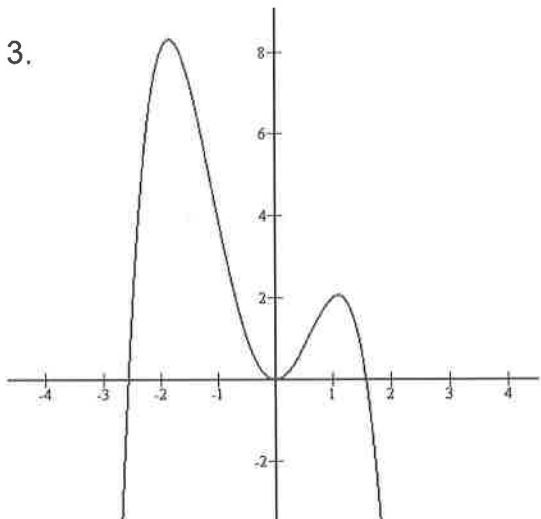
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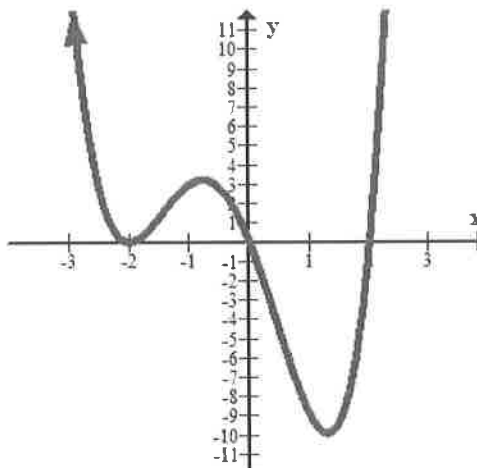
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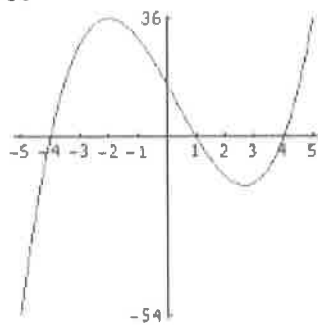
3.



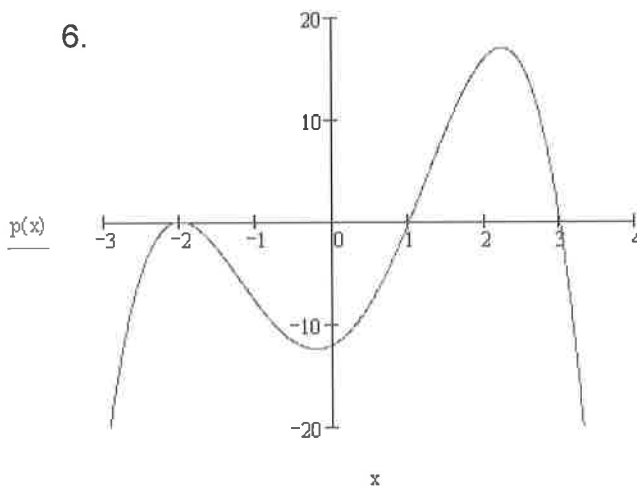
4.



5.

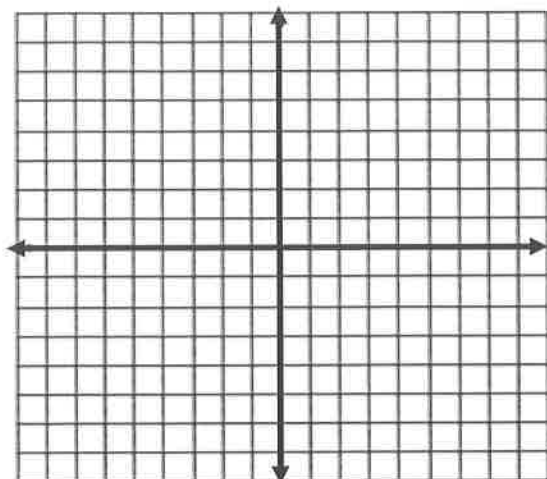


6.

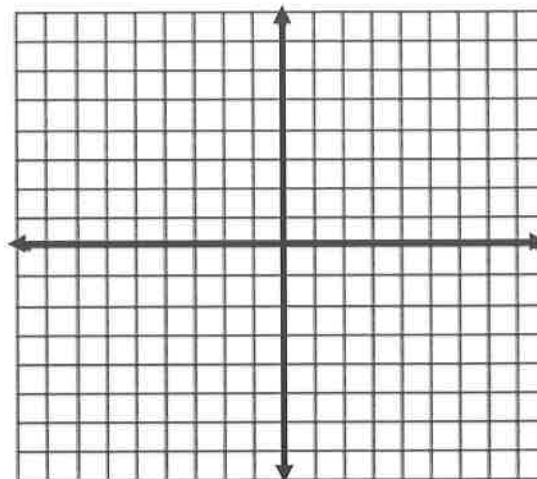


For #6-10, identify the zeroes and y-intercept for each equation. Then sketch the graph of each function.

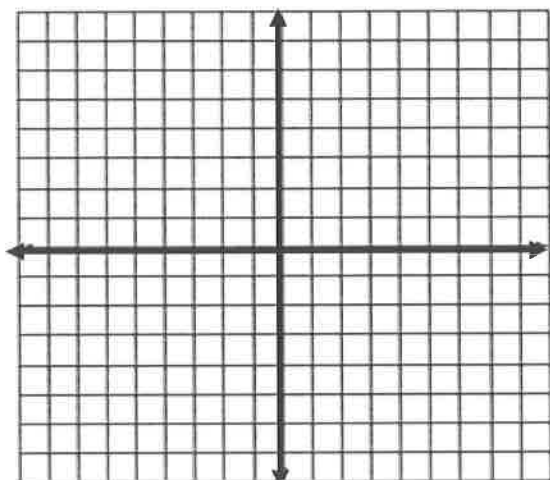
6. $f(x) = (x + 1)(x - 2)(x - 4)$



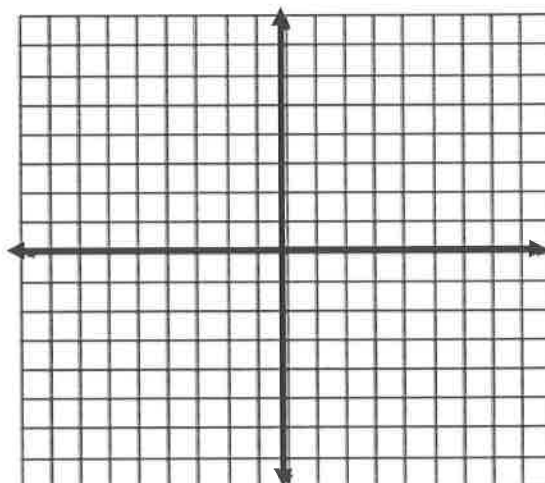
7. $f(x) = -(x + 3)(x + 2)(x - 1)^2$



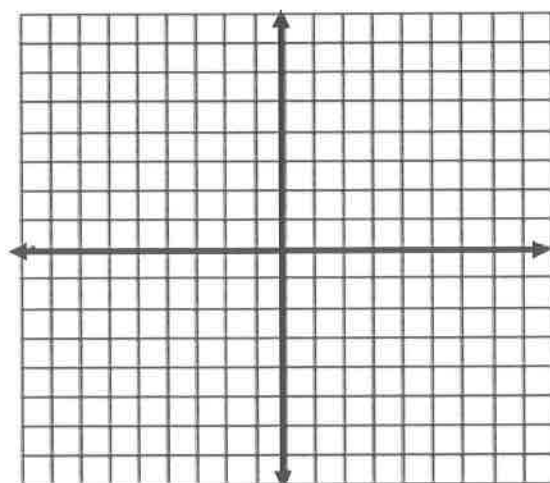
8. $f(x) = -x(x + 5)2(x + 3)$



9. $f(x) = 3(x - 3)(x + 7)(x - 1)$



10. $f(x) = -2(x - 1)(x + 2)(x + 5)(x - 3)$



Math is Fun Worksheet

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Divide

1:

$$\begin{array}{r} \overline{)63700} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

2:

$$\begin{array}{r} \overline{)51084} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

3:

$$\begin{array}{r} \overline{)26296} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

4:

$$\begin{array}{r} \overline{)61152} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

5:

$$\begin{array}{r} \overline{)105240} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

6:

$$\begin{array}{r} \overline{)62466} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

7:

$$\begin{array}{r} \overline{)168780} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$

8:

$$\begin{array}{r} \overline{)173237} \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \\ \underline{} \\ \end{array}$$