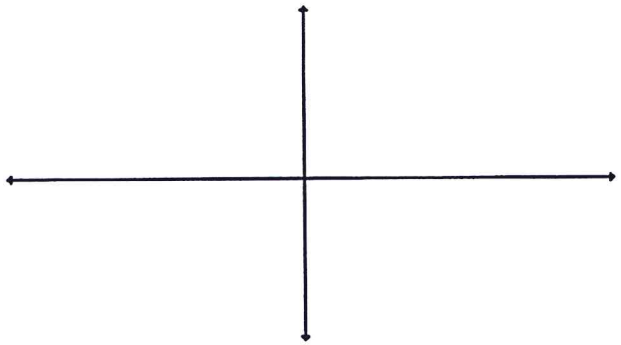
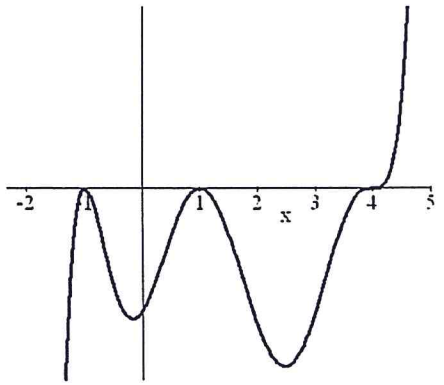
1. Sketch this function using the shapes of the zeros and the end behavior.

$$y = (x - 5)^3(x + 6)^3(x + 2)(x - 1)^2$$

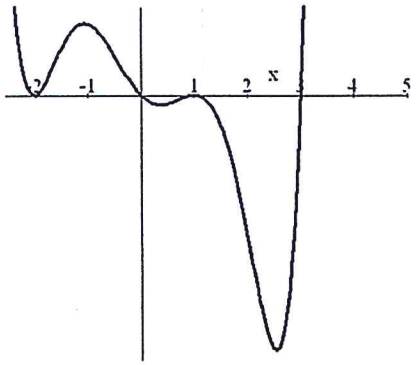


ALG 2 BELLWORK
THUR 12-17-15

2. Write a possible equation for the function shown in this graph. Leave your answer in Factored Form.



3. Write the equation of this polynomial with the proper coefficient a, given the point (2, -16) is on the graph. Leave your answer in Factored Form.



4. Write an equation for a polynomial that has the following zeros:

2 (single) and -3 (double) Give your answer in Standard Form

ANSWERS

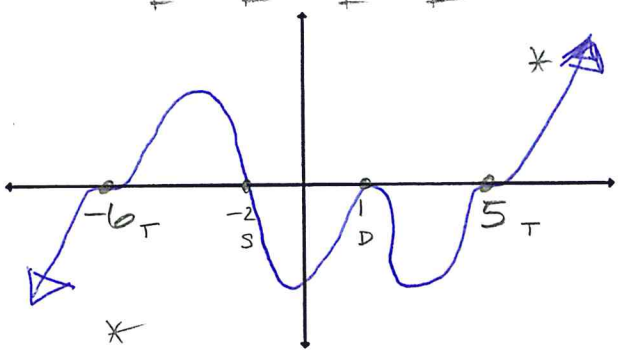
ALG 2 BELLWORK THUR 12-17-15

1. Sketch this function using the shapes of the zeros and the end behavior.

$y = (x - 5)^3(x + 6)^3(x + 2)(x - 1)^2$

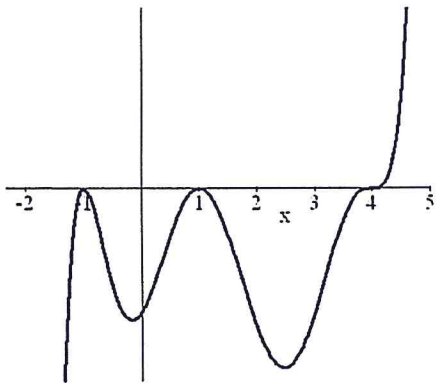
+ + + +

ODD
POS (↙, ↗)



Zeros: 5 (triple)
-6 (triple)
-2 (single)
1 (double)

2. Write a possible equation for the function shown in this graph. Leave your answer in Factored Form.



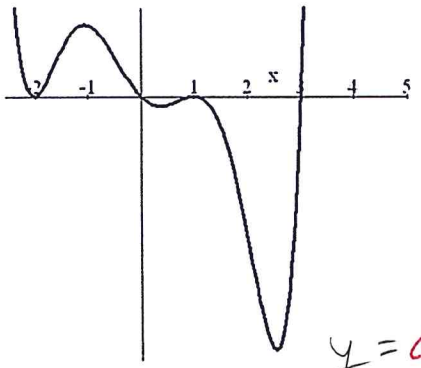
Zeros:
-1 double
1 Double
4 Triple

end behavior
POS ODD

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

+ + +

3. Write the equation of this polynomial with the proper coefficient a, given the point (2, -16) is on the graph. Leave your answer in Factored Form.



Zeros
-2 Double
0 single
1 double
3 single

END BEHAVIOR:
POS EVEN

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

$-16 = a\,2(2+2)^2(2-1)^2(2-3)$

$-16 = a\,2(16)(1)(-1)$

$-16 = a(-32)$

$1/2 = a$

$y = \frac{1}{2}x(x+2)^2(x-1)^2(x-3)$

4. Write an equation for a polynomial that has the following zeros:

2 (single) and -3 (double) Give your answer in Standard Form

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

$y = (x-2)(x^2+6x+9)$

	x^2	$+6x$	$+9$
x	x^3	$+6x^2$	$+9x$
-2	$-2x^2$	$-12x$	-18

$y = x^3 + 4x^2 - 3x - 18$