

1. Sketch a graph of each polynomial.

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

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

c)  $f(x) = -2(x + 6)^3(x + 1)^2$

End Behavior:

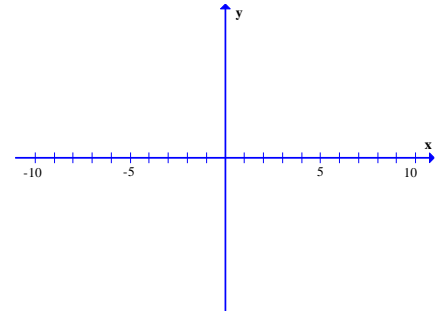
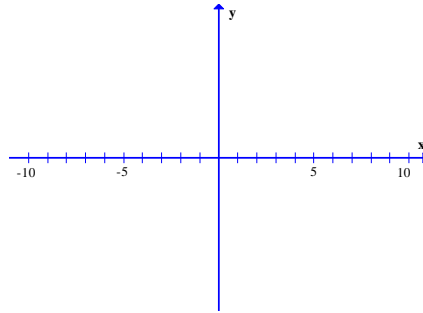
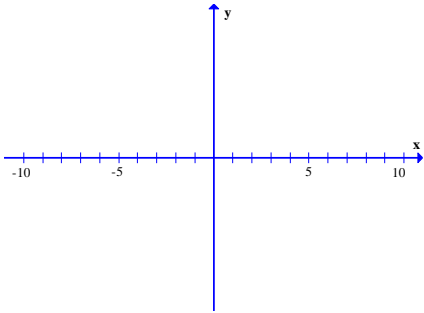
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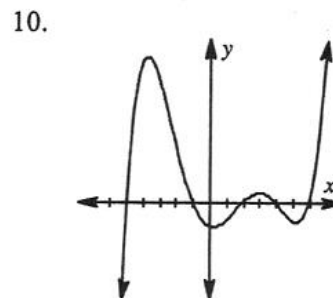
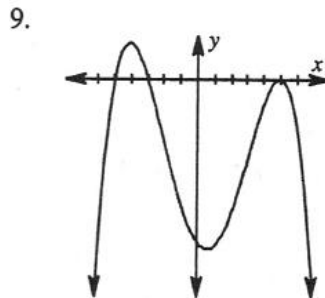
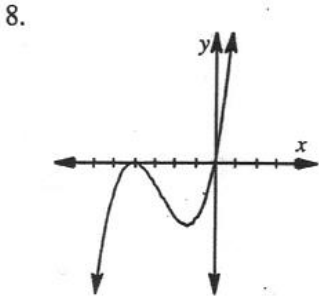
<b>Zeroes</b>			
<b>Mult.</b>			

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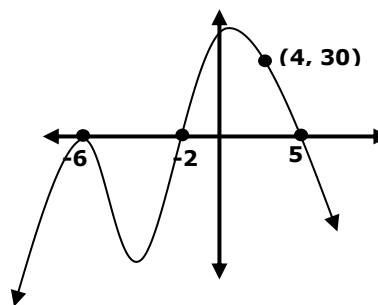
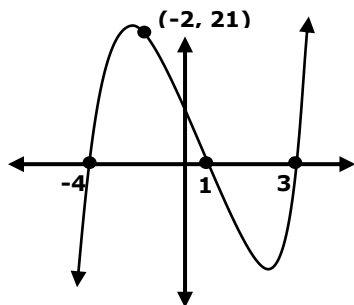
<b>Zeroes</b>			
<b>Mult.</b>			



2. Write an equation for each polynomial.



3. Write the exact equation of each of the following polynomials.



4. Find the exact equation of a polynomial with roots at 3, 4, and -2, passing through the point (-1, 28).

5. Find the cubic equation in standard form with zeros at  $x=3$ ,  $x=-5$ , and  $x=5$ .

6. divide the following:

a)  $(3x^3 - 5x^2 - 34x + 24) \div (3x - 2)$

b)  $(x^3 + x^2 - 5x + 3) \div (x - 1)$

c)  $(x^3 - 6x^2 - x + 30) \div (x + 2)$

7.  $3x^3 - 10x^2 - 9x + 4$  has a real root at  $x = -1$ . Find the other 2 roots.

8. Find all roots for the following polynomial:  $y = 2x^3 - 3x^2 - 11x + 6$