PAP Algebra 2 Ch. 4 Review Name:_____

1. Complete the charts below.

Quadratics	
Odd or Even Symmetry	
End behaviors	
# of roots	
Possible # of extrema	
Absolute maximum or minimum	
Domain	
Range	

Sketch a Quadric with zero roots.

Cubics	
Odd or Even Symmetry	
End behaviors	
# of roots	
Possible # of extrema	
Absolute maximum or minimum	
Domain	
Range	

Sketch a Cubic with two roots.

Quartics	
Odd or Even Symmetry	
End behaviors	
# of roots	
Possible # of extrema	
Absolute maximum or minimum	
Domain	
range	

Sketch a Quartic with exactly 2 roots.

Quintics	
Odd or Even Symmetry	
End behaviors	
# of roots	
Possible # of extrema	
Absolute maximum or minimum	
domain	

Sketch a Quintic with 3 roots.

Given the equations in factored form, answer the questions.

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

Roots:

Write the multiplicity under each root.

End behavior

Sketch the graph.

Standard form: (Show Work!)

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

Roots:

Write the multiplicity under each root.

End behavior

Sketch the graph.

Standard form: (Show Work!)

4. $y = (2x + 1)(4x^2 + 4x + 1)$

Roots:

Write the multiplicity under each root.

End behavior

Sketch the graph.

Standard form: (Show Work!)

5. $Y = -7x(x + 5)^2$

Roots:

Write the multiplicity under each root.

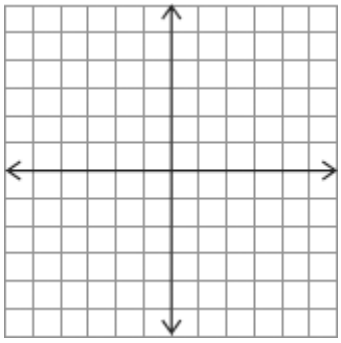
End behavior

Sketch the graph.

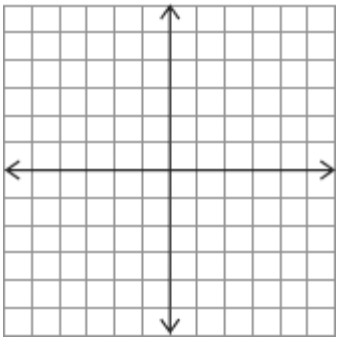
Standard form: (Show Work!)

Sketch the graph of $f(x)$ and describe the end behavior of each graph.

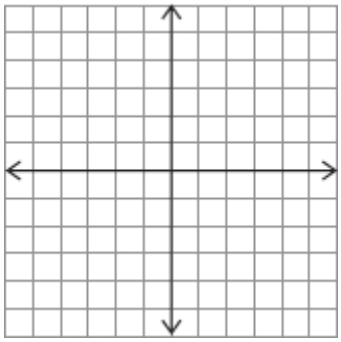
6. x^4



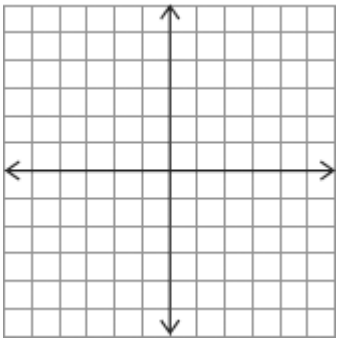
7. $-x^5$



8. x^3



9. $-x^2$



10. Describe transformations happening from f(x). Write a cubic function to represent each and complete a table to 3 points on the graph.

a. $g(x) = -2f(x) - 3$

b. $g(x) = f(-2x) + 3$

c. $g(x) = \frac{1}{2} f(x-5) - 2$

11. Describe the transformations from p(x) to m(x).

d. $p(x) = x^5;\ m(x) = 0.5p(-x) + 4$

e. $p(x) = x^4;\ m(x) = -p(0.5x) + 2$

12. List the number of possible extrema for each polynomial.

a. 3rd degree polynomial

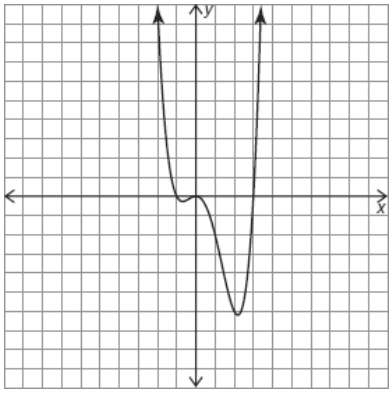
b. 4th degree polynomial

c. 8th degree polynomial

d. 15th degree polynomial

Circle the function(s) that could model each graph. Describe your reasoning for either eliminating or choosing each function.

13.

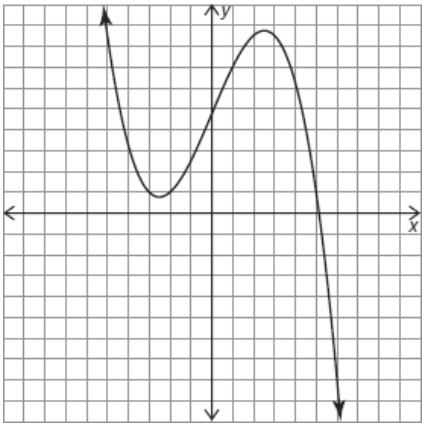


$f(x) = x^4 - 2x^3 - 3x^2$

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

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

14.



$f(x) = 4x^6 + 2x^3 - 1$

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

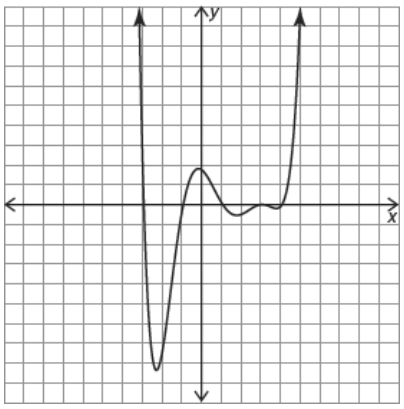
$f(x) = -0.25(x+2)(x-5)(x+3) + 2$

15.

$f(x) = -2x^6 - 13x^5 + 20x$

$f(x) = 2x^6 - 13x^5 + 26x^4 - 7x^3 - 28x^2 + 20x$

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

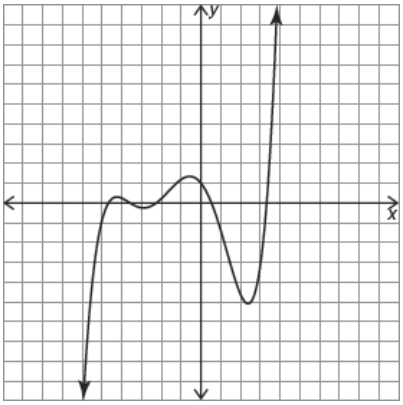


16.

$f(x) = 3x^5 + 20x^4 - 10x^3 - 240x^2 - 250x + 200$

$f(x) = (2x-3)(x+4)(x-10)(x+14) + 20$

$f(x) = -3x^7 + 15x^6 - 20x^2 + 125x - 150$

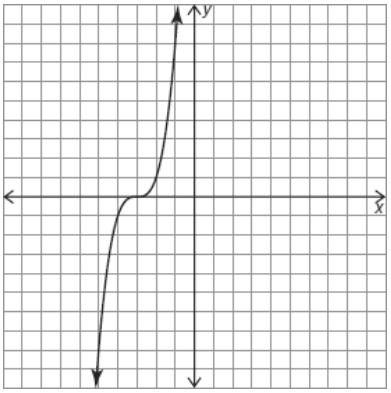


17.

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

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

$f(x) = (x+3)^3$



18.

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

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

$f(x) = -2x^5 + x^4 - 3x^3 + 12$