Algebra 3-4

Name: Key

Date: _____

U1IF7: Graphing Polynomials

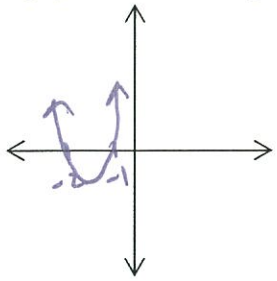
Find all zeros and sketch a graph of each function. Label all axis appropriately.

1.) $f(x) = 3x^2 + 9x + 6$

$3(x^2+3x+2) = 3(x+2)(x+1)$

$x=-2$ $x=-1$

Even positive

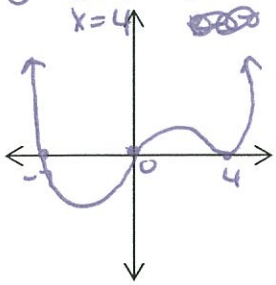


2.) $y = x(x-4)^2(x+7)$

Even (4 zeros) Positive

$x=0$ $x=4$ $x=-7$

$x=4$

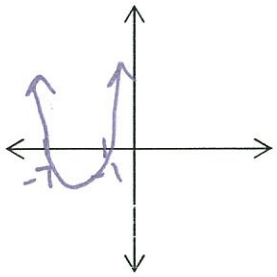


3.) $f(x) = x^2 + 8x + 7$

Even positive

$(x+7)(x+1)$

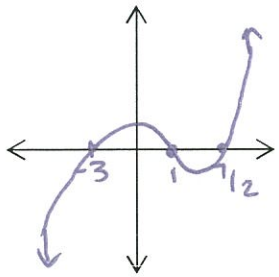
So $x=-7$ $x=-1$



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

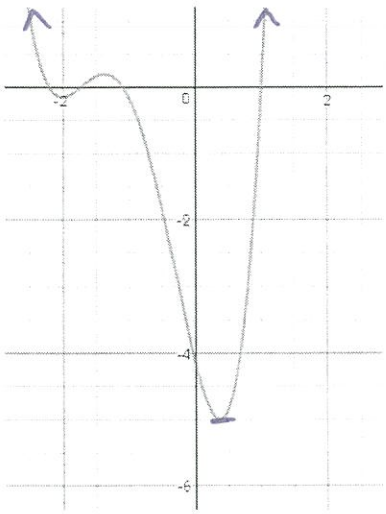
Odd positive

$x=1$ $x=-3$ $x=7/2$



Identify the domain and range using interval notation.

6.



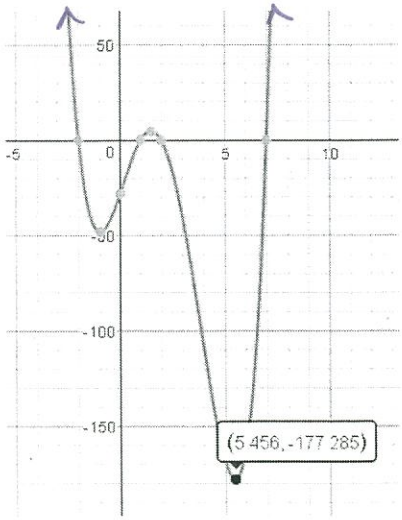
Domain: All real numbers

Range: $x \geq -5$

or

$(-5, \infty)$

7.



Domain: All real numbers

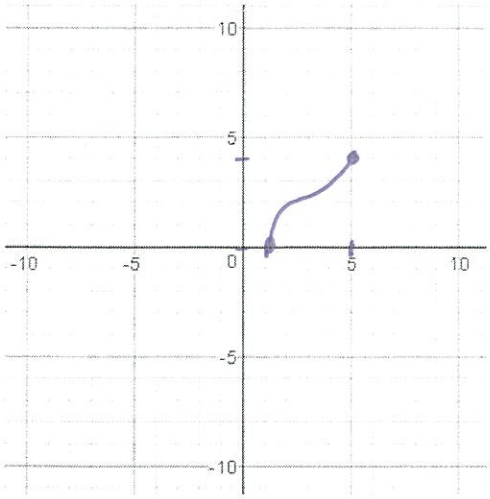
Range: $x \geq -177.285$

or

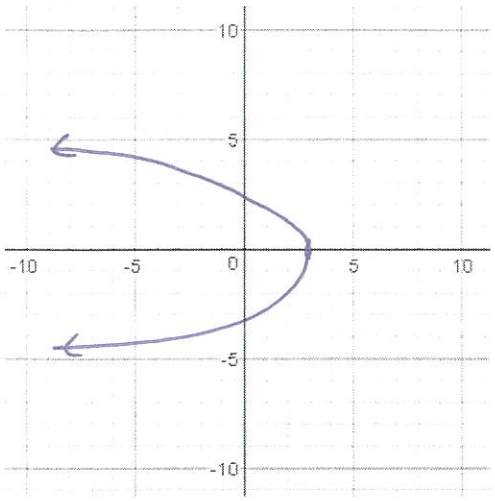
$(-177.285, \infty)$

8.) Draw a graph with:
Domain: $2 \leq x \leq 5$
Range: $0 \leq x \leq 4$

Many diff. things would work!



9.) Draw a graph with:
Domain: $x \leq 3$
Any range you want! But make it NOT a function.



For numbers 5-6, sketch a polynomial function with the given zeros, multiplicities, and leading coefficient.

5.)

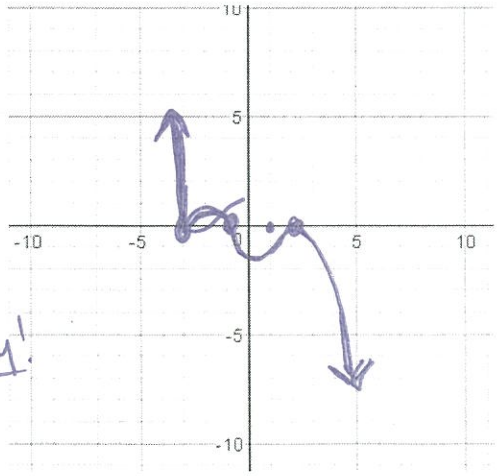
Zero at -3; multiplicity of 2

Zero at -1; multiplicity of 1

Zero at 2; multiplicity of 2

Leading Coeff: -16

How many total zeros? 5 Is it (odd) or even?



Sorry!

6.)

Zero at 2; mult. of 2

Zero at 0; mult. of 1

Leading Coeff: 5

How many total zeros? 3 Is it (odd) or even?