Day 08 Writing Equations of Polynomial Functions

Master Eq

- When given the roots, make sure to use the opposite sign in each factor.
- If it is a tangent the factor needs an exponent of 2 and a terrace needs an exponent of 3
- If it is a fraction, make sure to "swing" the denominator (example, don't write (x – ½), write (2x – 1).
- For imaginary solutions the factor will always be $(x^2 + \#)$.

1-9: Write an equation in factored form for each polynomial described. (assume a=1 if it is not given.

1. Solutions at 2, -1 and a tangent at 5.

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

2. Solutions at 7 and a terrace at 1. a=4

$y = 4(x-7)(x-1)^3$

3. The roots are 0, $\frac{2}{3}$, and -3

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

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

4. The zeros are $-\frac{1}{2}$, 2, and $\pm 4i$

$y = (x+\frac{1}{2})(x-2)(x-4i)(x+4i)$

$y = (2x+1)(x-2)(x^2+16)$

5. a= -3, solutions at $\pm 2i$, 6, and a tangent at -5

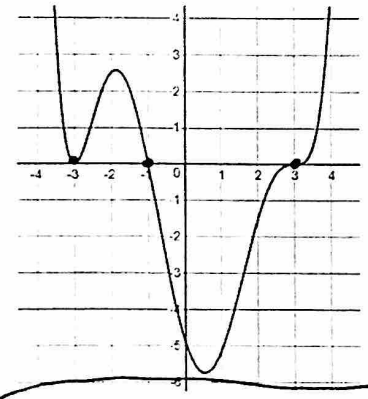
$y = -3(x^2+4)(x-6)(x+5)^2$

6. The roots are $\frac{2}{5}$ and $\pm\sqrt{2}$

$y = (x-\frac{2}{5})(x-\sqrt{2})(x+\sqrt{2})$

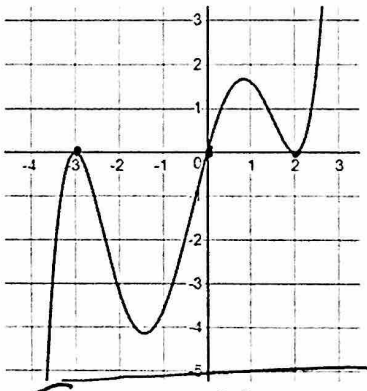
$y = (5x-2)(x^2-2)$

7. a= .02



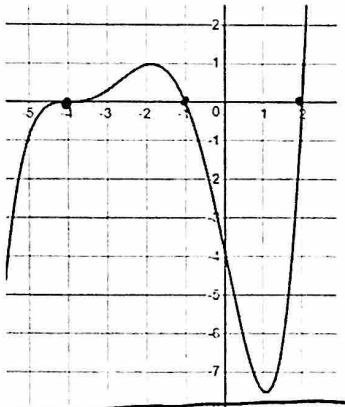
$y = .02(x+3)^2(x+1)(x-3)^3$

8. a= .1



$y = .1(x-3)^2(x)(x-2)^2$

9. a= .03



$y = .03(x+4)^3(x+1)(x-2)$