Advanced Algebra

Unit 5 Polynomials Assignment #6

I can multiply out to general form

Multiply the following problems out into general form.

**Notes Example**: y= (x-2)(x+4)(x-6)

We should be able to foil the product of two binomials in our head at this point in the year.

So (x-2) ( x+4)= x2+2x-8

Now I will take (x-6) and multiply it by (x2+2x-8) I will set up a 3 by 2 box to help with this.

| | $x^2$ | 2x | -8 |
|---|---|---|---|
| **x** | $x^3$ | $2x^2$ | -8x |
| **-6** | $-6x^2$ | -12x | 48 |

Now combine like terms and you have **y= $x^3$-4$x^2$-20x+48**. The reason that being able to put something into general form is so important is that you can use the power rule to find the derivative. The power rule is the easiest calculus rule and it is only for a polynomial in general form.

For the following problems, put them into general form and then find the derivative function. Locate the Local max and local min.

1) y= (x-3)(x+4)(x+6)                     2) y= (x+8)(x-2)(x+3)

#2 General form

#1 General form          #1 Derivate          #2 Derivative

Coordinates of local Max                     Coordinates of the Local Max

Coordinates of the local min                     Coordinates of the local min

3) y= (x+4)(x-6)(x+6)                     4) y= (2x-3)(x+4)(x+2)

#4 General Form

#2 General form

#4 Derivative

#2 Derivate

5) y= (x+4)(x-8)(x+12)

6) y= (3x-2)(x+4)(x-6)

General Form Equation

General Form equation

Derivative function

Derivative Function

Coordinates of the local max and min

Coordinates of the local max and min

7) y= (4x-2)(x+2)(x-5)

8) y= (x-5)(x+8)(2x-2)

General form Equation

General form equation

Derivative Function

Derivative function

Coordinates of the local max and min

Coordinates of the local max and min