I Like to Use My Imagination Activity Sheet

Now that you know that *i* =  and *i2* = -1, evaluate the following powers of *i.*

i3 = i4 =

i5 = i6 =

i7 =i8 =

If you have evaluated these powers correctly, you will notice a pattern developing. Explain this pattern in your own words.

Practice adding Complex Numbers in the form a + b*i*

(2 – 5*i*) + (6 – 5*i*) = (0 + 4*i*) + (6 + 0*i*) =

(-3 + 5*i*) + (0 + 2*i*) = (-5 + 5*i*) + (3 – 5*i*) =

Practice subtracting Complex Numbers in the form a + b*i*

(2 – 5*i*) - (6 – 5*i*) = (0 + 4*i*) - (6 + 0*i*) =

(-3 + 5*i*) - (0 + 2*i*) = (-5 + 5*i*) - (3 – 5*i*) =

Last, but not least, practice multiplying Complex Numbers in the form a + b*i*

(2 – 5*i*) (6 – 5*i*) = (0 + 4*i*) (6 + 0*i*) =

(-3 + 5*i*) (0 + 2*i*) = (-5 + 5*i*) (3 – 5*i*) =

(a + b*i*)(a + b*i*) =

Write your own explanation for what happened in the last problem.

Can you make any assumptions based on what you observed?

Mixed Review

1. Identify the transformation(s) that take place from y = x2 to y = -(x + 5)2 -7

 a.

 b.

 c.

 d.

2. Multiply (x – 7)(7x – 8)

3. Factor 5x2 – 28 – 49

4. What is the vertex of y = 5(x – 7)2 +3?

5. How can you tell if the graph of a quadratic function opens up or down?