**I. Multiple Choice** - Answer each question in this part on the line provided. Each question in this part is worth*2 points.*

\_\_\_\_ 1.

 

\_\_\_\_ 2.

 

\_\_\_\_ 3.



\_\_\_\_ 4.

 

\_\_\_\_ 5.



\_\_\_\_ 6. The graph of the quadratic function  includes the following coordinates: ***A***(0, 16), ***B***(2, 4), and ***C***(5, 31). What are the new coordinates based on the transformation $g\left(x\right)=f\left(-x\right)?$

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | ***A’***(16, 0), ***B’***(4, 2), ***C’***(31, 5) | 3) | ***A’***(0, 16), ***B’***(-2, 4), ***C’***(-5, 31) |
| 2) | ***A’***(0, -16), ***B’***(2, -4), ***C’***(5, -31) | 4) | ***A’***(0, -16), ***B’***(-2, -4), ***C’***(-5, -31) |

**II.** Each question is worth *4 points.* Partial credit will be allowed. Show all work in order to reveive full credit. A correct response with no work shown will receive only one credit.

 7. Consider the functions $f\left(x\right)=3x+2$ and $g\left(x\right)= \frac{8-x}{3}$

 a) Find 

 b) Solve the equation 

.

 8.

 

.

.

**III.** Each question is worth *6 points.* Partial credit will be allowed. Show all work for full credit. A correct response with no work shown will receive only one credit.

 10. For the given relation $f\left(x\right)=3(2x-5)$

 (a) State the inverse.

 (b) Prove that your result is correct using compositions.

.

 11. Classify the symmetry of each function as even, odd, or neither. Use the justification box to justify your answer.

|  |  |  |
| --- | --- | --- |
| **Function** | **Classification** | **Justification** |
| $$f\left(x\right)=-5x^{2}+3x^{4}$$ |  |  |
| $$g\left(x\right)=3x^{2}-7$$ |  |  |
| $$h\left(x\right)=2x^{3}+3x-10$$ |  |  |
| $$k\left(x\right)=2x^{5}+3x$$ |  |  |