**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Unit 5 Review – Functions**

**Helpful Information:**

**Function** – x-values can NOT repeat (vertical line test)

**Domain** – x-values **Range**- y-values

**One-To-One** – function in which y-values can NOT repeat (horizontal line test)

**Inverse** – – switch x and y, then solve for y

**Composition** –

**Transformations –** (remember x changes opposite)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Reflection** | **Dilations** | **Translations** |
| **Changes on x** |  |  |  |
| **Changes on y** |  |  |  |

**Even Functions** – symmetric about the y-axis () \*\*Example:

**Odd Functions** – symmetric about the origin (180º rotation) () \*\*Example:

**Level I Practice:**

1. If  and , then  equals

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

1. Are the given functions inverses? Justify your answer.
2. Which equation represents an odd function?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

**Level II Practice:**

1. Given , which equation represents ?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

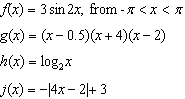
1. Find given that and .
2. Sketch a graph of the function . Is the function odd, even, or neither? Explain your answer.

**Level III Practice:**

1. If  and , then which statement is *not* true?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

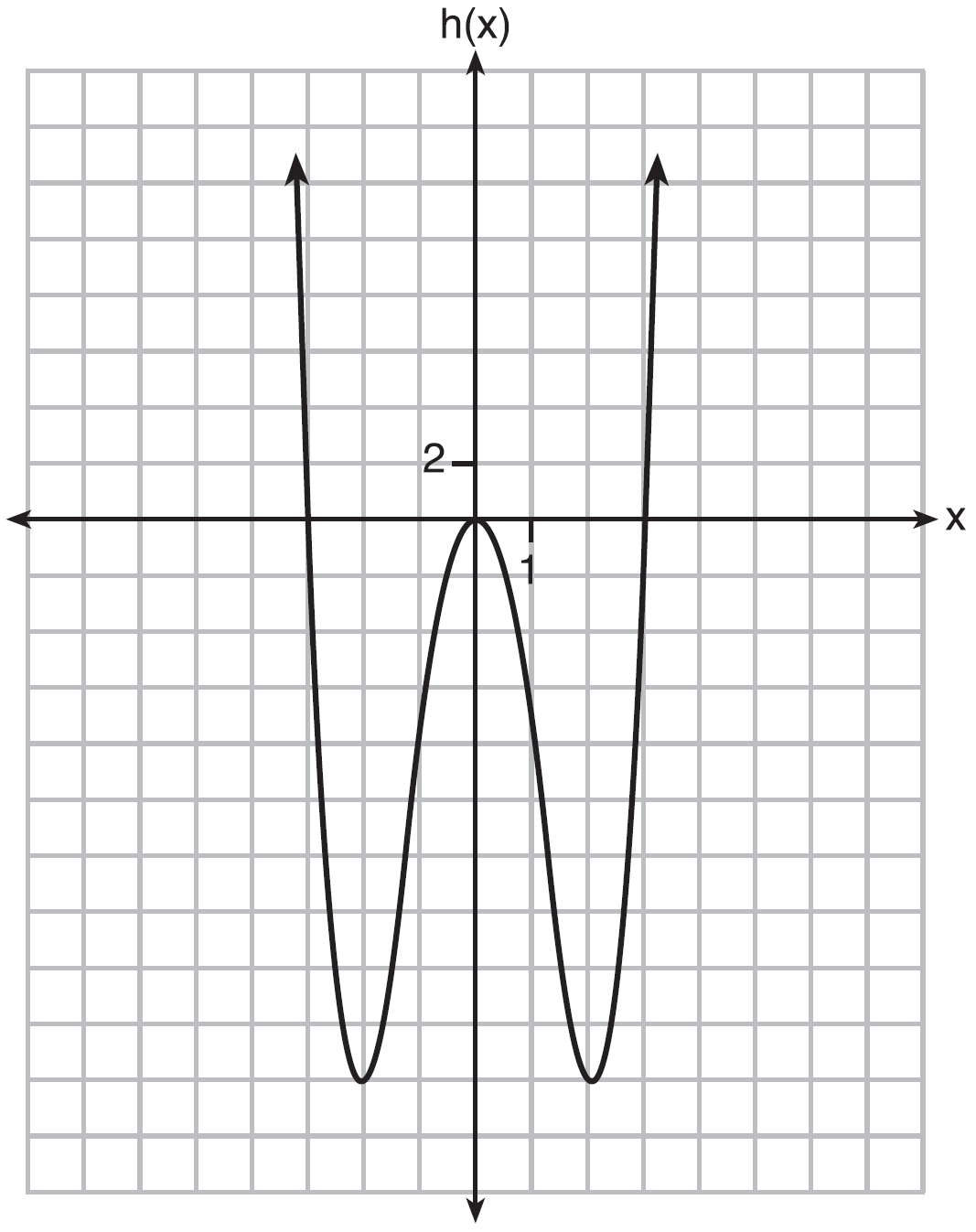
1. Which statement regarding the graphs of the functions below is *untrue*?



|  |  |
| --- | --- |
| 1) | and  have a maximum *y*-value of 3. |
| 2) | , , and  have one *y*-intercept. |
| 3) | and  have the same end behavior as . |
| 4) | , , and  have rational zeros. |

1. Show the inverse of a linear function , where and , is also a linear function.
2. Functions *f*, *g*, and *h* are given below. Which statement is true about functions *f*, *g*, and *h*?





|  |  |
| --- | --- |
| 1) | and  are odd,  is even. |
| 2) | and  are even,  is odd. |
| 3) | is odd,  is neither,  is even. |
| 4) | is even,  is neither,  is odd. |