

Inverses of Functions HOMEWORK

Directions: Answer the questions in the space provided. Be sure to circle or box your answers and show your work for questions that require work. Use a separate sheet of paper if you need more space.

For questions 1-3, find the inverse relation for the set of ordered pairs or table. Determine if the inverse relation is a function, write function or not a function.

1) $\{(1, -3), (-2, 3), (5, 1), (6, 4)\}$	2) $\{(-5, 7), (-6, -8), (1, -2), (10, 3)\}$	3) <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">x</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">5</td> <td style="padding: 2px 5px;">9</td> </tr> <tr> <td style="padding: 2px 5px;">y</td> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">16</td> <td style="padding: 2px 5px;">24</td> <td style="padding: 2px 5px;">16</td> </tr> </table>	x	2	3	5	9	y	6	16	24	16
x	2	3	5	9								
y	6	16	24	16								

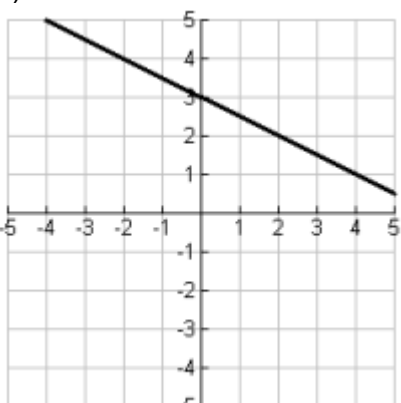
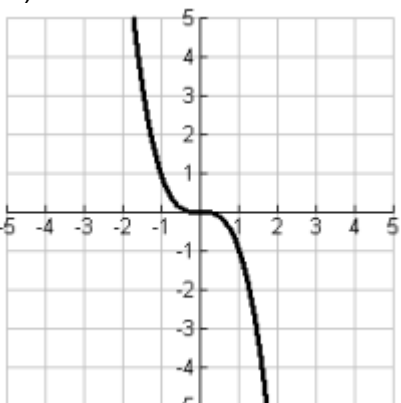
For questions 4-6, find an equation for the inverse algebraically (include a domain restriction if necessary). Determine if the inverse is a function, write function or not a function. If the inverse is not a function, write a domain restriction for the original function so that the inverse will be a function.

4) $y = 12x - 3$	5) $f(x) = x^2 - 4$	6) $g(x) = \sqrt{x + 5}$
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For questions 7-8, determine if the two functions, $f(x)$ and $g(x)$ are inverses of each other by using **compositions**.

7) $f(x) = -3x - 9$ $g(x) = -\frac{1}{3}x - 3$	8) $f(x) = 4x + 12$ $g(x) = \frac{1}{2}x - 9$
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For questions 9-10, graph the inverse of each relation below on the same graph with the original function. Determine if the inverse is a function, write function or not a function.

<p>9)</p> 	<p>10)</p> 
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11) The formula $W = \frac{25}{7}h - \frac{800}{7}$ approximates the recommended minimum weight in pounds for a person h inches tall, where $62 \leq h \leq 76$.

(a) What is the recommended minimum weight for someone 70 inches tall?

(b) Does W represent a one-to-one function? Explain your reasoning.

(c) Find a formula for the inverse.

(d) Evaluate the inverse for 150 pounds and interpret the result.

(e) What does the inverse compute? In other words, what does the inverse function tell you about this situation?