

Hw: 2,3

$$h = \frac{0.00252d^{2.27}}{e}$$

$$d = 100\text{m}, e = 1.2\text{ m}$$

$$h = \frac{0.00252(100)^{2.27}}{(1.2)}$$

$$h \approx 72.8\text{ m}$$

$$100 \boxed{y^x} 2.27$$

$$100 \boxed{x^y} 2.27$$

6.7 Inverse Relations and Functions

The inverse of a relation is the relation formed when the independent variable is exchanged with the dependent variable in a given relation.

Find the inverse from a table or set of ordered pairs
Find the inverse from a graph
Find the inverse from an equation

Switch every x and y value.	<table border="1"> <tr> <td>x</td> <td>y</td> <td>Inverse:</td> </tr> <tr> <td>1</td> <td>5</td> <td>$\{ (0, 2), (4, 9), (7, 11) \}$</td> </tr> <tr> <td>2</td> <td>6</td> <td>5 4</td> </tr> <tr> <td>3</td> <td>7</td> <td>6 2</td> </tr> <tr> <td>4</td> <td>8</td> <td>7 3</td> </tr> <tr> <td></td> <td></td> <td>8 4</td> </tr> <tr> <td></td> <td></td> <td>Inverse:</td> </tr> <tr> <td></td> <td></td> <td>$\{ (2, 0), (9, 4), (11, 7) \}$</td> </tr> </table>	x	y	Inverse:	1	5	$\{ (0, 2), (4, 9), (7, 11) \}$	2	6	5 4	3	7	6 2	4	8	7 3			8 4			Inverse:			$\{ (2, 0), (9, 4), (11, 7) \}$
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Switch every x and y value. *The graph of the inverse is always a reflection of the original graph across the line $y=x$.	<table border="1"> <tr> <td style="text-align: center;">Original (Not function)</td> <td style="text-align: center;">Inverse (function)</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Original (Not function)	Inverse (function)																						
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In your equation, replace x with y and y with x. Solve this new equation for y.	<table border="1"> <tr> <td> $y = x - 4$ Inverse: $x = y - 4$ $+4 \quad +4$ $x + 4 = y$ $y = x + 4$ </td> <td> $2x - 3y = 4$ Inverse: $2y - 3x = 4$ $+3x \quad +3x$ $2y = 3x + 4$ $\frac{2y}{2} = \frac{3x + 4}{2}$ $y = \frac{3}{2}x + 2$ </td> </tr> </table>	$y = x - 4$ Inverse: $x = y - 4$ $+4 \quad +4$ $x + 4 = y$ $y = x + 4$	$2x - 3y = 4$ Inverse: $2y - 3x = 4$ $+3x \quad +3x$ $2y = 3x + 4$ $\frac{2y}{2} = \frac{3x + 4}{2}$ $y = \frac{3}{2}x + 2$																						
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Important fact: If the inverse of function $f(x)$ is also a function, it is denoted by $f^{-1}(x)$.

$$f(x) = x - 4$$

$$f^{-1}(x) = x + 4$$