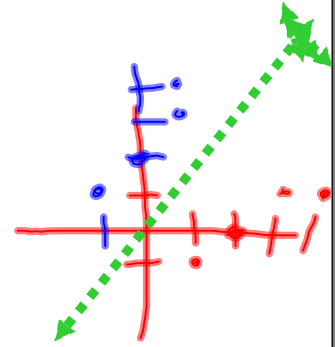


### 7.7 Inverse Relations and Functions

**Inverse relation:** the "x" and "y" value switch

**Ex1** Find the inverse relation

x	1	2	3	4
y	-1	0	1	1

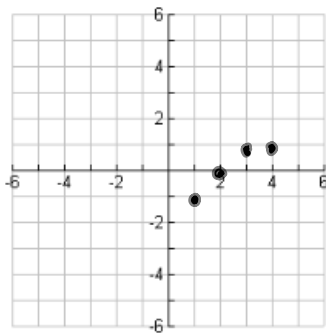


x	-1	0	1	1
y	1	2	3	4

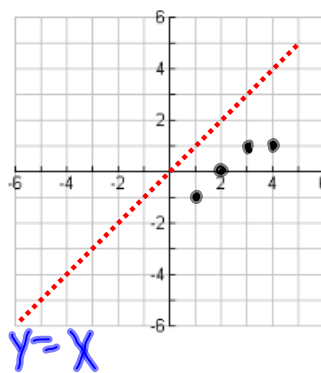
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**Ex2** Graph  $s$  and its inverse.

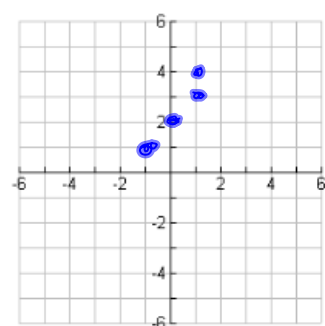
Relation  $s$



Reversing the Ordered Pairs



Inverse of  $s$



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**Ex 3** Interchanging x and y

Find the inverse of  $y = x^2 + 3$

Domain:  $\mathbb{R}$   
Range:  $[3, \infty)$   
 $\mathbb{R}: y \geq 3$

$y = x^2 + 3$

$x = y^2 + 3$

$\sqrt{x-3} = \sqrt{y^2}$

$\pm\sqrt{x-3} = y$

$\mathbb{R}: x \geq 3$   
 $D: [3, \infty)$   
 $R: \mathbb{R}$

1) switch  $x \leftrightarrow y$   
2) Solve  $y$

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Pg 410

5-19 odd

24, 35-40


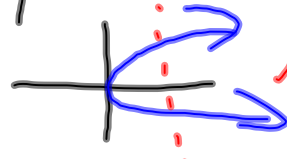
$f(x) = x^2$

$y = x^2$

$x = y^2$

$y = \pm\sqrt{x}$

Mar 1-1:39 PM

<p>Orig. <math>y = x</math> line Function</p> <p><math>y = x^2</math>  Function</p> <p>-</p>	<p>Inv. <math>x = y</math> Function</p> <p><math>y = \pm\sqrt{x}</math>  NO</p>
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Mar 1-2:29 PM