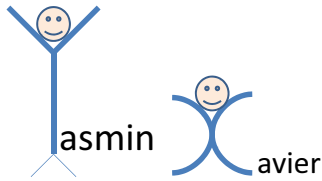


4.9 Inverse of a function

Imagine 2 friends:

Compare	If	Then
Age	$y = x$	
Height	$y = 2x$	
Marks	$y = x + 5$	
Stamp collection	$y = x - 10$	
Game score	$y = 3x - 2$	



Sometimes we need to inverse a function to express it in terms of the other variable.

1

Examples:

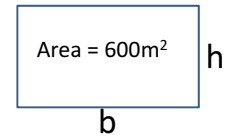
1) If $P = 4x$

Then $x =$



2) If $A = 600 \text{ m}^2$

Then $h =$



And $b =$

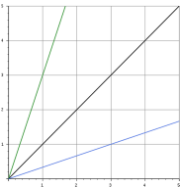
3) If $C = 10 + 2n$

Then $n =$

2

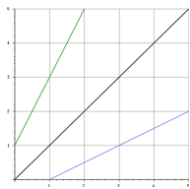
1. In a Direct Variation situation

If $y = ax$ then $x = \frac{y}{a}$



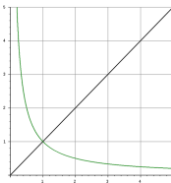
2. In a Partial Variation situation

If $y = ax + b$ then $x = \frac{y-b}{a}$



3. In a Rational Variation situation

If $y = \frac{c}{x}$ then $x = \frac{c}{y}$



3

To find the inverse of a function: Swap the x's and y's of each co-ordinate.

Ex. 1:

Function A

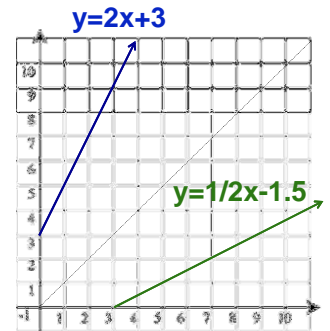
x	y
0	3
1	5
2	7
3	9
4	11

$f(x)$

Inverse of A

x	y
3	0
5	1
7	2
9	3
11	4

$f^{-1}(x)$



4

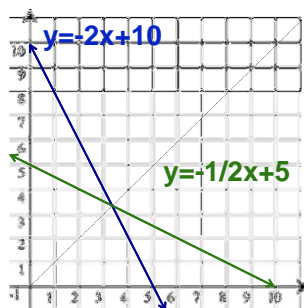
Ex 2: Graph $y = -2x + 10$ and its inverse

Function A

x	y
0	
1	
2	
3	
4	
5	

Inverse of A

x	y



5

To find the inverse of a function: Swap the x's and y's of each co-ordinate.

Ex. 1:

Function A

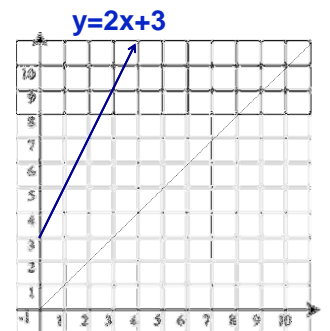
x	y
0	3
1	5
2	7
3	9
4	11

$f(x)$

Inverse of A

x	y

$f^{-1}(x)$

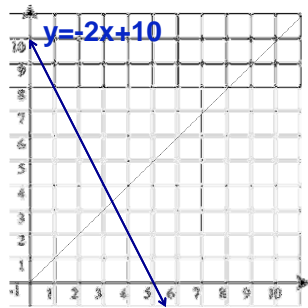


6

Ex 2: Graph $y = -2x + 10$ and its inverse

Function A Inverse of A

x	y	x	y
0			
1			
2			
3			
4			
5			



7

Practice:
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8