

**STUDENT A**Inverses Talk Frame

Given the function  $f(x) = 3x + 2$

Jeana claims the inverse of  $f(x)$  is represented by the following table.

John claims the inverse of  $f(x)$  is represented by the following equation.

Kevin claims the inverse of  $f(x)$  is represented by the following graph.

Jeana's Inverse Claim		John's Inverse Claim	Kevin's Inverse Claim
x	$f^{-1}(x)$	$f^{-1}(x) = x - \frac{2}{3}$ $f^{-1}(x) = y - \frac{2}{3}$	
8	2		
2	0		
-10	-4		
5	1		

For each claim, state whether it is correct or incorrect, and create an argument to defend your claim.

Jeana's claim is correct because when you plug in the number <sup>(f(x))</sup> to the equation you get the correct <sup>(x value)</sup> number. John's claim statement is incorrect because when you switch x and y and solve for the new y value the equation becomes  $y = \frac{1}{3}x + \frac{2}{3}$  not  $y = x - \frac{2}{3}$ . Kevin's claim statement is correct b/c his graph matches Jeana's chart.

**STUDENT B1**

Inverses Talk Frame

Given the function  $f(x) = 3x + 2$

Jeanna claims the inverse of  $f(x)$  is represented by the following table.

John claims the inverse of  $f(x)$  is represented by the following equation.

Kevin claims the inverse of  $f(x)$  is represented by the following graph.

$$3(1) + 2$$

$$3(3) + 2$$

$$3(-1) + 2$$

$$-3 + 2 = -1$$

$$3(-2) + 2 =$$

$$-6 + 2$$

Jeanna's Inverse Claim		John's Inverse Claim	Kevin's Inverse Claim
x	$f^{-1}(x)$	$f^{-1}(x) = x - \frac{2}{3}$	
8	2		
2	0		
-10	-4		
5	1		

- 0, 2  
1, 5  
-1, -1  
-2, -4
- ↓
- 2, 0  
5, 1  
-1, -1  
-4, -2

For each claim, state whether it is correct or incorrect, and create an argument to defend your claim.

- ③ - Kevin is correct because when I graphed the inverse using the function his graph was the same as mine,
- ② - Jeanna is correct because the x is the normal function which is on the left and on the right there is the inverse and all of the points are correct and match up with the graph points,
- ① - John is correct because when you plug points into his claim they do come out correct.

x	y
1	5
0	2
2	8
4	14

**STUDENT C**Inverses Talk Frame

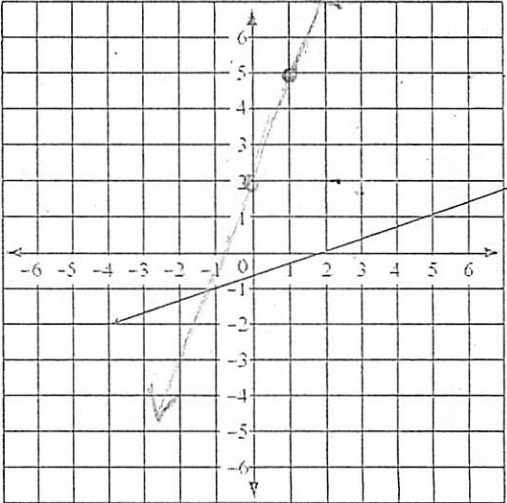
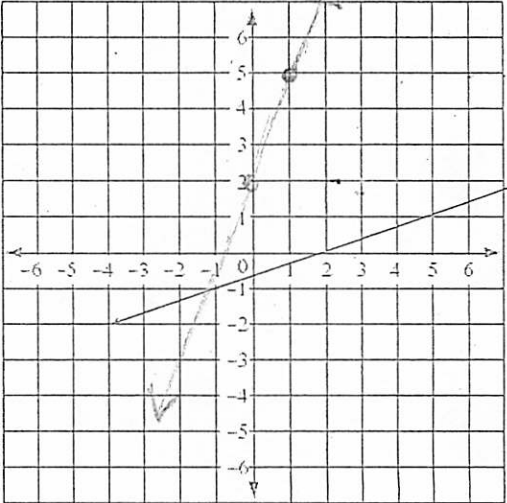
Given the function  $f(x) = 3x + 2$

Jeana claims the inverse of  $f(x)$  is represented by the following table.

John claims the inverse of  $f(x)$  is represented by the following equation.

Kevin claims the inverse of  $f(x)$  is represented by the following graph.

(0, 2) (1, 5)

Jeana's Inverse Claim		John's Inverse Claim	Kevin's Inverse Claim
x	$f^{-1}(x)$		
8	2	$f^{-1}(x) = x - \frac{2}{3}$	
2	0		
-10	-4		
5	1		
Yes			

For each claim, state whether it is correct or incorrect, and create an argument to defend your claim.

Jeanna's claim is correct because when I plug 2 in the original equation  $y = 8$ . Same follows the other numbers

John's inverse claim is incorrect because when I plug the inverse of (4, 2) which is (2, 0) into  $f^{-1}(x) = x - \frac{2}{3}$  I do not get matching results.

Kevin's inverse claim is correct because when the original line is plotted I took the point (1, 5) then switched (5, 1). Then checked for that point on Kevin's graph and it was there. After checking other points his graph matched.

**STUDENT D**

Given the function  $f(x) = 3x + 2$

Jeana claims the inverse of  $f(x)$  is represented by the following table.

John claims the inverse of  $f(x)$  is represented by the following equation.

Kevin claims the inverse of  $f(x)$  is represented by the following graph.

Fun - Output Fun-Input  
Inv - input Inv-output

Jeana's Inverse Claim		John's Inverse Claim	Kevin's Inverse Claim
x	$f^{-1}(x)$	$f^{-1}(x) = x - \frac{2}{3}$	
8	2	he did not divide x by 3	
2	0	he divided it.	
-10	-4		
5	1		
$3 \cdot 5 + 2 = 17$ $3 \cdot 12 + 2 = 38$			
✓		X	✓

For each claim, state whether it is correct or incorrect, and create an argument to defend your claim.

Kevin is correct

$f(x) = 3x + 2$

John is incorrect

Jeana's is correct when you put x value in the function 8y did match up with the original equation

$3(2) + 2 = 8$   
 $(2, 8) (8, 2)$

$3(-4) + 2 = -10$   
 $(-4, -10) (-10, -4)$

$\frac{-10 - 2}{3} = -4$   
 $(-10, -4)$

~~$x = 3y + 2$~~   
 ~~$x - 2 = 3y$~~   
 ~~$\frac{x - 2}{3} = y$~~   
 ~~$y = \frac{x - 2}{3}$~~   
 ~~$x - 2 = 3y$~~   
 ~~$\frac{x - 2}{3} = y$~~

$3(1) + 2 = 5$   
 $(1, 5) (5, 1)$   
 $3(0) + 2 = 2$   
 $(0, 2) (2, 0)$

$\frac{8 - 2}{3} = 2$   
 $(8, 2)$

$\frac{2 - 2}{3} = 0$   
 $(2, 0)$

$\frac{x - 2}{3} = y^{-1}$