Math 1215 Hw 11 **Name:** Answer Key

The given coordinates are on f(x), find the coordinates for $f^{-1}(x)$.

1. (-2,4) 2. (4,7) 3. (0,11) 4. (-3,-8)

(4,-2) (7,4) (11,0) (-8,-3)

Find the algebraic inverse.

5. $f(x)=15x-1$

$Y = 15x-1$

$Y-1=15x$

$x=\frac{y-1}{15}$

$y=\frac{x-1}{15}$

$f^{-1}(x)=\frac{x-1}{15}$

OR

$f^{-1}(x)=\frac{1}{15}(x-1)$

OR

$f^{-1}(x)=\frac{1}{15}x-\frac{1}{15}$

6. $f(x)=\frac{1}{4}x-2$ $Y=\frac{1}{4}x-2$

$f^{-1}(x)=4(x+2)$

OR

$f^{-1}(x)=4x+8$

$Y+2=\frac{1}{4}x$

$4(Y+2)=X$

$Y=4(x+2)$

7. $f(x)=\frac{2x-5}{3}$; find $f^{-1}(x)$

$Y=\frac{2x-5}{3}$

$3y=2x-5$

$3y+5=2x$

$x=\frac{3y+5}{2}$

$y=\frac{3x+5}{2}$

$f^{-1}(x)=\frac{3x+5}{2}$

OR

$f^{-1}(x)=\frac{1}{2}(3x+5)$

OR

$f^{-1}(x)=\frac{3}{2}x+\frac{5}{2}$

8. To convert from x degrees Celsius to y degrees Fahrenheit, we use the formula $y=f(x)=\frac{9}{5}x+32$. Find the formula To convert from x degrees Fahrenheit to y degrees Celsius?

$y=\frac{9}{5}x+32$

$y-32=\frac{9}{5}x$

$x=\frac{5}{9}(y-32)$

$y=\frac{5}{9}(x-32)$

$f^{-1}(x)=\frac{5}{9}(x-32)$

The more well known

$F=\frac{9}{5}C+32$

and $C=\frac{5}{9}(F-32)$