

#16 ~ Sect. 7.7: Inverse Relations & Functions (Part 2)

Domain: The set of all x-values for the function.

Range: The set of all y-values for the function.

f^{-1} ● → inverse function notation

Ex. 4: Consider the function $f(x) = \sqrt{2x+2}$.

a) Find the domain & range of f .

Domain:

Range:

b) Find f^{-1} .

c) Find the domain and range of f^{-1} .

Domain :

Range :

d) Is f^{-1} a function? Explain.

Composition of Inverse Functions :

If f and f^{-1} are inverse functions, then

$$\left(f^{-1} \circ f\right)(x) = x \quad \text{and} \quad \left(f \circ f^{-1}\right)(x) = x$$

Ex. 5: For the function $f(x) = \frac{1}{2}x + 5$, find $\left(f^{-1} \circ f\right)(652)$
and $\left(f \circ f^{-1}\right)\left(-\sqrt{86}\right)$.