Math 120 - Quiz 4 - November 5, 2015

Name and Section Solutions

Let

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

1. (1 point) What is the domain of the function $f(x)$?

All numbers except $x=3$.

2. (6 points) Compute its inverse.

$$y = 5 + \frac{1}{x-3}$$

$$y-5 = \frac{1}{x-3}$$

$$\frac{1}{y-5} = x-3$$

$$x = 3 + \frac{1}{y-5}$$

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

3. (2 points) What are the domain and range of its inverse $f^{-1}(x)$?

Domain: all numbers except $x=5$.

Range: all numbers except $y=3$

4. (1 point) What is the range of $f(x)$?

All numbers except $y=5$.