6. Consider the set of integers . The set x consists of all ordered pairs of integers. In symbols,

x

For example, (2,-5) , (0,0) , (-127,10) , and (-5,2) are all distinct elements of x .

Notice that the order matters; (2,-5) and (-5,2) are different elements of x .

Now let’s define a few functions on x :

(a) What is the range of each of these functions? In other words, is the image an integer, a rational number or only a real number?

(b) For which of these functions (if any) is the image of equal to the image of ?