

# MATH 120 Class Prep

## Day 16

Complete the following items before class and bring your work to class. Your instructor will be checking for completion and effort. You may work with other students on this activity. You are responsible for your understanding of the ideas you present as your own work.

1. Let  $f : \mathbb{Z} \rightarrow \mathbb{Z}$  be defined by  $f(x) = -x$  for all  $x \in \mathbb{Z}$ . Is  $f$  injective? (Video 3.4A)

2. Let  $g : \mathbb{N} \rightarrow \mathbb{N}$  be defined by  $g(n) = n + 1$  for all  $n \in \mathbb{N}$ . Is  $g$  surjective? (Video 3.4B)

3. Give an example of a bijection between the sets  $S = \{a, b, c\}$  and  $T = \{w, x, y, z\}$ , or explain why one does not exist. (Videos 3.4C & 3.4D)

4. For the sets  $S$  and  $T$  in Question 3, how many injections are there from  $S$  to  $T$ ? (Video 3.4E)