

Math 099 - Quiz 2

February 12, 2019

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Let $Y = \{x | x \in \mathbb{N} \text{ and } x < 10\}$. Rewrite Y in roster notation.

$$Y = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

2. (2 points) Let $M = \{x | x = 5k + 2 \text{ and } k \in \mathbb{N}\}$.

THE ELEMENTS OF M ARE

- (a) Give an example of a natural number that is an element of M .

NATURAL NUMBERS

$$k=1 \rightarrow x=7$$

THAT ARE 2 MORE

THAN A MULTIPLE OF 5

$$7 \in M$$

- (b) Give an example of a natural number that is not an element of M .

$$5 \notin M$$

3. (3 points) Use set-builder notation to describe the following set.

$$\{8, 9, 10, 11, \dots, 28, 29\}$$



$$\{x | x \in \mathbb{N} \text{ AND } 8 \leq x \leq 29\}$$

4. (3 points) Let $R = \{x | x \in \mathbb{N} \text{ and } x < 1\}$. Write the description for R in words.

R is the set...

OF ALL x 's SUCH THAT x IS A NATURAL NUMBER
AND x IS LESS THAN 1.