

NAME: \_\_\_\_\_

NUMBER: \_\_\_\_\_

QUIZ over Section 4 in the 'CAT' book; 20 points.

1. (2 pts) How would a mathematician state the general principle that is being illustrated in the following cases?

$$0 \cdot 3 = 0$$

$$0 \cdot 1.4 = 0$$

$$0 \cdot \frac{1}{2} = 0$$

$$0 \cdot (-3) = 0$$

$$0 \cdot 0 = 0$$

...

2. (2 pts) Give shorthands, if possible, for each of the following expressions. Write each in the most conventional way:

(1 pt)  $y \cdot 7 \cdot x$

(1 pt)  $5 \cdot 3$

3. (3 pts) Represent the following sequence of operations by an expression. Let  $x$  denote the number that you're starting with.

Take a number, add 3, then multiply by 5.

4. (2 pts) In words, describe the sequence of operations represented by the expression:  
 $5x - 3$

5. (2 pts) For each pair of mathematical sentences given below, circle the 'best' one, in keeping with normal mathematical conventions.

(1 pt) Let  $x \in \mathbb{Z}$ .

Let  $n \in \mathbb{Z}$ .

(1 pt) For all  $i \in [0, 2)$ .

For all  $t \in [0, 2)$ .

6. (3 pts) Handwrite each of the following variables in the correct way:

$x$

$y$

$z$

$t$

$i$

$l$

7. (3 pts) List THREE COMMON USES FOR VARIABLES:

(a)

(b)

(c)

8. (3 pts) State how you would READ ALOUD each of the following sentences:

(a)  $x \in \mathbb{R}$

(b) For all  $x \in \mathbb{R}$  ...

(c) Let  $x \in \mathbb{R}$ .