

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

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

QUIZ over Section 3 in the 'CAT' book; 20 points.

1. (3 pts) Make a pair of PARENTHESES: \_\_\_\_\_  
Make a pair of BRACES: \_\_\_\_\_  
Make a pair of BRACKETS: \_\_\_\_\_
2. (2 pts) Let  $W = \{2, 4, 6, 8, \dots\}$ . Decide whether the following sentences are true, false, or sometimes true/sometimes false (ST/SF):
  - (a)  $224 \in W$
  - (b)  $\frac{1}{2} \in W$
  - (c)  $\frac{20}{2} \in W$
  - (d)  $n \in W$
3. (3 pts) For each sentence below, make a number line, and shade the value(s) of  $x$  that make the sentence true. Be careful to distinguish between hollow dots (numbers not included) and solid dots (numbers included).
  - (a)  $x \in \{1, 2\}$
  - (b)  $x \in (1, 2]$
  - (c)  $x \notin (-\infty, 2)$
4. (6 pts) Classify each entry below as an expression or a sentence. If an expression, state whether it is a number or a set. If a sentence, state whether it is true, false, or ST/SF.
  - (a)  $\{1, 2\}$
  - (b)  $x \in [1, 2]$
  - (c)  $1 \in (1, 2)$
5. (2 pts) List all the subsets of  $\{c, d\}$ . How many subsets are there?
6. (2 pts) Answer YES or NO, and JUSTIFY your answers to each of the following questions:
  - (a) Is  $\{-0.4, \frac{1}{2}, 7\}$  a subset of  $\mathbb{R}$ ?
  - (b) Is  $\{-0.4, \frac{1}{2}, 7\}$  a subset of the integers?
7. (2 pts) Describe each set shaded below, using either LIST or INTERVAL notation (whichever is appropriate).