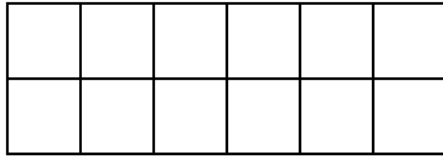


1. Consider the figure shown on the picture below.



- (a) How many squares are there on the picture?
(b) How many rectangles are there on the picture?

For problems 2-5, let $A = \{1, 2, 5, 8, 9\}$ and $B = \{2, 4, 6, 8\}$.

2. Draw a Venn diagram depicting these sets.

3. Find each of the following.

- (a) $A \cap B =$
(b) $A \cup B =$
(c) $B \cup (A \cap B) =$

4. Label each of the following statements as true or false.

- (a) $A \subseteq A \cap B$
(b) $B \subseteq A \cup B$
(c) $A \cap B \subseteq A \cup B$

5. Subsets.

- (a) List all two-element subsets of A .
(b) List all subsets of B .

6. We walk into a restaurant. The menu lists 2 different choices for appetizers, 3 different choices for the main entry, and 5 different choices for desserts. How many different 3-entry meals can a guest possibly select? (Assume that a 3-entry meal consists of 1 appetizer, 1 main entry, and 1 dessert.)
7. How many different four digit numbers can be formed from the digits 1, 2, 3, and 4, if repetition is allowed (for example, 1424 is allowed)?
8. How many different four digit numbers can be formed from the digits 1, 2, 3, and 4, if repetition is not allowed (for example, 1424 is not allowed)?