Work right on this page, and staple to the end of your HW #13.

1. Write in words how to read the given notation out loud. (You can write the numbers as numerals still, and keep letters used as variables or set-names, but *everything* else needs to be written out in words.)

    (a) $A \subseteq \{x \mid x^2 < 20\}$

    (b) $\{-1\} \nsubseteq \mathbf{Z}^+$

    (c) $\{1\} \in \mathcal{P}(\mathbf{Z})$

2. Convert the given sentence entirely to notation.

    (a) The set of real numbers is not a subset of the set of positive integers.

    (b) The empty set is a member of the power set of the set containing 1.

3. Let $X = \{\heartsuit\clubsuit, *, \$, 0, \{k, 2\}, Ohio\}$. Fill in each blank with the correct choice of $\subseteq$ or $\nsubseteq$. (Write the entire notation as your answer, not just the $\in$ or $\notin$ symbol alone.)

(a) 0_____X 　　　　　　(b) $\heartsuit$_____X 　　　　　　(c) $\emptyset$_____X

(d) $Ohio$_____X 　　　　　(e) $\{Ohio\}$_____X 　　　　　(f) $\{k, 2\}$_____X

4. Perform the following tasks involving subsets of $X = \{\heartsuit\clubsuit, *, \$, 0, \{k, 2\}, Ohio\}$.

(a) Use correct roster notation to write a subset Y of X for which $n(Y) = 2$.

(b) Write two distinct subsets of X that each have a cardinality of 4. ("Distinct" in mathematics just means "not equal." Unequal sets *can* share some elements.)

(c) List as many subsets as possible that contain $*$ and $\$$ but not $\heartsuit\clubsuit$ and not $\{k, 2\}$.

(d) What is the cardinality of $\mathcal{P}(X)$?

(e) Write a subset of $\mathcal{P}(X)$ that has a cardinality of 3. (Careful! I want a subset, not just a member.)