1. (similar to #4 in textbook) Use the roster method to specify the truth set for each of the following open sentences. The universal set for each open sentence is the set of integers ($\mathbb{Z}$).

   (a) $\sqrt[3]{n} \in \mathbb{N}$ and n is less than 100.

   (b) n is an even integer that is greater than -4 and less than 20.

   (c) $n - 5 = 3$.

   (d) $n^4 = 16$.

   (e) n is an odd integer greater than 21.

2. (similar to #5 in textbook) Use set builder notation to specify the following sets. Also sketch each set on the number line.

   (a) The set of all even integers greater than or equal to 0.

   (b) The set of all even integers.

   (c) The set of all real numbers greater than 0 and less than 5.

   (d) The set of all integers greater than or equal to -10 and less than 10.

   (e) The set of all real numbers greater than or equal to -10 and less than 10.

   (f) The set of all integers less than -10 or greater than or equal to 5.

   (g) The set of all real numbers less than -10 or greater than or equal to 5.

3. For each of the following sets, use English to describe the set and when appropriate, use the roster method to specify all of the elements of the set. Also sketch each set on the number line.

   (a) $\{x \in \mathbb{Z} \,|\, -2 \leq x \leq 4\}$ (b) $\{x \in \mathbb{R} \,|\, -2 \leq x \leq 4\}$ (c) $\{x \in \mathbb{R} \,|\, x^2 = 81\}$

   (d) $\{x \in \mathbb{R} \,|\, x^2 + 81 = 0\}$ (e) $\{x \in \mathbb{Z} \,|\, x \text{ is odd }\}$ (f) $\{x \in \mathbb{Z} \,|\, 5x - 8 = 21\}$

   (g) $\{x \in \mathbb{R} \,|\, 5x - 8 = 21\}$ (h) $\{x \in \mathbb{Z} \,|\, 5x - 9 \geq 21\}$ (i) $\{x \in \mathbb{R} \,|\, 5x - 9 \geq 21\}$