2. Sets of Numbers

You will almost always have a question asking you to identify which numbers belong to which number set. All of the following are **real numbers**.

The set of **natural numbers** includes the numbers we use for counting:
{1, 2, 3, 4, 5, 6, 7,. . .}

The set of **whole numbers** includes the natural numbers along with 0.
{0, 1, 2, 3, 4, 5, 6, 7,. . .}

The set of **integers** includes both of the sets above along with the negative numbers.
{. . . -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5. . .}

The set of **rational numbers** includes the above sets along with any number that can be written in the form of a fraction.
Numbers such as $\frac{3}{4}$, $-\frac{4}{1}$ that can be written as the ratio of two integers. When written as decimals, these numbers must terminate or repeat. For example, $\frac{1}{4} = 0.25$ and $\frac{2}{3} = 0.666...$

The set of irrational numbers are real numbers that are not rational such as square roots or numbers which do not terminate or repeat like pi. For example, $\sqrt{3}$, $\sqrt[3]{5}$, π.

We also have non-real numbers which are also called imaginary.
For example, $\sqrt{-4}$, $4i$.

For your practice, you get to decide which numbers belong to which set.