1.57: Image

Let X and Y be sets, f be the function $f : X \rightarrow Y$, and x be some member of X. Then the **image** of x under f, denoted $f(x)$, is the unique member y of Y that f associates with x.

The **image** of a subset $A \subseteq X$ under f is the subset of Y defined by $f[A] = \{y \in Y \mid y = f(x) \text{ for some } x \in A\}$.