



























Definition 1. *The map below defines the **Flags** relation.*

	A		B		C		D		E		
	G		H		I		J		K		
	M		N		O		P		Q		
	S		T		U		V		W		
	Y		Z								

The **Flags** relation includes three sets:

- The domain consists of the 26 flags in the table.
- The codomain consists of the 26 letters in the English alphabet.
- A set of ordered pairs. The pair (flag, letter) is a member of the Flags relation if the table pairs the flag and letter.

Exercise 1 $\left(L, \begin{array}{|c|c|} \hline \text{Yellow} & \text{Black} \\ \hline \text{Black} & \text{Yellow} \\ \hline \end{array} \right) \in \text{Flags}$

Multiple Choice:

- (a) True

(b) *False* ✓

Feedback (attempt): (flag, letter)

Exercise 2 $\left(\begin{array}{|c|c|} \hline \text{red} & \text{white} \\ \hline \text{white} & \text{red} \\ \hline \end{array}, U \right) \in \text{Flags}$

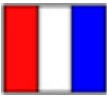
Multiple Choice:

(a) *True* ✓

(b) *False*

Feedback (attempt): (flag, letter)

Definition 2. The value of a function at a particular domain element is also called the **image** of the domain element.

Example 1. The image of  under the Flags function is T.

$\text{Flags}\left(\begin{array}{|c|c|c|} \hline \text{red} & \text{white} & \text{blue} \\ \hline \end{array} \right) = T$

Definition 3. The domain of the Flags function includes 26 flags. The domain is a **set**. A separate collection of some of these flags would form a **subset** of the domain.

Suppose D is a subset of the domain.

The **Image** of D would be the subset of the range consisting of the images of all of the elements of D . The image of D under the Flags function is written as $\text{Flags}(D)$.

Exercise 3 Let $\text{Some} = \left\{ \begin{array}{|c|c|c|} \hline \text{red} & \text{white} & \text{blue} \\ \hline \end{array}, \begin{array}{|c|} \hline \begin{array}{|c|c|} \hline \text{red} & \text{white} \\ \hline \end{array} \\ \hline \end{array}, \begin{array}{|c|c|c|} \hline \text{yellow} & \text{blue} & \text{yellow} \\ \hline \end{array} \right\}$

Determine $\text{Flags}(\text{Some})$

Select All Correct Answers:

- (a) X
- (b) T ✓
- (c) B
- (d) G ✓
- (e) W ✓

Feedback (attempt): The image is the subset $\{ T, W, G \}$
