Name: **Quiz 3**

Let

$X = \{\text{apples, bananas, carrots, celery, kiwi, lemons, oranges, onions, peaches, pears}\}$
$Y = \{a, b, c, \ldots, x, y, z\}$

and consider the function

$$\begin{aligned} f : X &\to Y \\ x &\mapsto \text{the first letter of the word } x. \end{aligned}$$

So, for example, $f(\text{apples}) = a$ and $f(\text{bananas}) = b$.

1. $f(\text{pears}) =$

2. Is f injective?

3. Is f surjective?

4. What is the range of f?

5. What is $f^{-1}(\{a, b, c, d, e\})$?

6. What is $f(A \cap B)$ if $A = \{\text{celery, bananas, kiwi}\}$ and $B = \{\text{bananas, kiwi, carrots}\}$?

7. What is $f(A) \cap f(B)$ if $A = \{\text{celery, bananas, kiwi}\}$ and $B = \{\text{bananas, kiwi, carrots}\}$?