① Apply the Rank-Nullity Theorem:

For any $m \times n$ matrix A,

$$\underbrace{\text{rank}(A)}_{=\dim(\text{Image}(A))} + \overbrace{\text{nullity}(A)}^{=\dim(\text{Kernel}(A))} = n$$

where n is the number of columns A

② Plug in the given values:

Here A is 7×9, so $n = 9$, and we're told $\text{nullity}(A) = 6$. Thus

$$\text{rank}(A) + 6 = 9$$

$$\Downarrow$$

$$\text{rank}(A) = 9 - 6 = 3$$

Answer: $\text{rank}(A) = 3$