

Exercise 37

Find the domain of the function.

$$F(p) = \sqrt{2 - \sqrt{p}}$$

Solution

The domain of a square root function is obtained by requiring that its argument be greater than or equal to zero. There are two square roots, so chain the domains together with the “and” logical operator.

$$\begin{array}{lll} 2 - \sqrt{p} \geq 0 & \text{and} & p \geq 0 \\ \sqrt{p} \leq 2 & \text{and} & p \geq 0 \\ 0 \leq p \leq 4 & \text{and} & p \geq 0 \end{array}$$

Therefore, the domain is $\{p \mid 0 \leq p \leq 4\}$.