Exercise 34

Find the domain of the function.

$$g(t) = \sqrt{3-t} - \sqrt{2+t}$$

Solution

The domain of a square root function is obtained by requiring that its argument be greater than or equal to zero.

$$\begin{aligned} 3 - t \geq 0 \qquad &\text{and} \qquad 2 + t \geq 0 \\ t \leq 3 \qquad &\text{and} \qquad t \geq -2 \end{aligned}$$

Therefore, the domain is $\{t \mid -2 \leq t \leq 3\}$.