Homework: pp. 91-93 (4, 6, 20, 38)

4) \( g(t) = \sqrt{t-4} \)

\( g(t) \) is not continuous because \( \lim_{t \to 3} \sqrt{t-4} \) and \( g(3) \) do not exist.

Therefore, \( g(t) \) is not continuous at 3.

6) \( h(t) = \frac{1}{\sqrt{(t-3)^4}} \)

\( h(t) \) is not continuous because \( h(3) \) does not exist. Therefore, \( h(t) \) is not continuous at 3.

20) \( g(\theta) = \frac{\sin \theta}{\theta} \)

\( \lim_{\theta \to 0} \frac{\sin \theta}{\theta} = 1 \) So, define \( g(0) = 1 \) to make the function continuous.

38) Let \( f(x) = x^3 + 3x - 2 \). The function is continuous on the interval \([0, 1]\).

\( f(0) = -2 \Rightarrow f(0) < 0 \)

\( f(1) = 2 \Rightarrow f(1) > 0 \)

So, there must be at least one number \( c \) between 0 and 1 such that \( x^3 + 3x - 2 = 0 \).