Chapter 1 - Introduction

Problem 1.1

$pi := 4\,atan(1)$ $\quad pi = 3.142$

$I_p := 100$ $\quad T_o := 8.3 \cdot 10^{-3}$ $\quad T := 16.67 \cdot 10^{-3}$

$I_{RMS} := \frac{I_p}{\sqrt{2}}$ $\quad I_{RMS} = 70.711$

$I_{AVG} := 2 \cdot \frac{I_p}{pi}$ $\quad I_{AVG} = 63.662$

Problem 1.2

$I_p := 100$ $\quad k := 0.5$ $\quad T := 16.67 \cdot 10^{-3}$

$I_{RMS} := I_p \cdot \sqrt{\frac{k}{2}}$ $\quad I_{RMS} = 50$

$I_{AVG} := \frac{I_p}{pi}$ $\quad I_{AVG} = 31.831$

$t_1 := 0$ $\quad t_1 = 0$

$t_2 := \frac{T}{2}$ $\quad t_2 = 8.335 \times 10^{-3}$

$T_o := k \cdot T$ $\quad T_o = 8.335 \times 10^{-3}$

$\theta_1 := 2 \cdot pi \cdot \frac{t_1}{T}$ $\quad \theta_1 = 0$

$\theta_2 := 2 \cdot pi \cdot \frac{t_2}{T}$ $\quad \theta_2 = 3.142$

$I_{AVG} := \frac{I_p}{2 \cdot pi} \cdot \int_{\theta_1}^{\theta_2} \sin(x)\,dx$ $\quad I_{AVG} = 31.831$
