

homework1.m

MATLAB_review.m

homework3_question197 mlx

Homework2.m

Problem 1.97

A rectangular pulse $x(t)$ is defined by

$$x(t) =$$

$$10, 0 \leq t \leq 5$$

$$0, \text{ otherwise}$$

Generate $x(t)$, using

- (a) A pair of time-shifted step functions
- (b) An M-file (numerically)

Part (a)

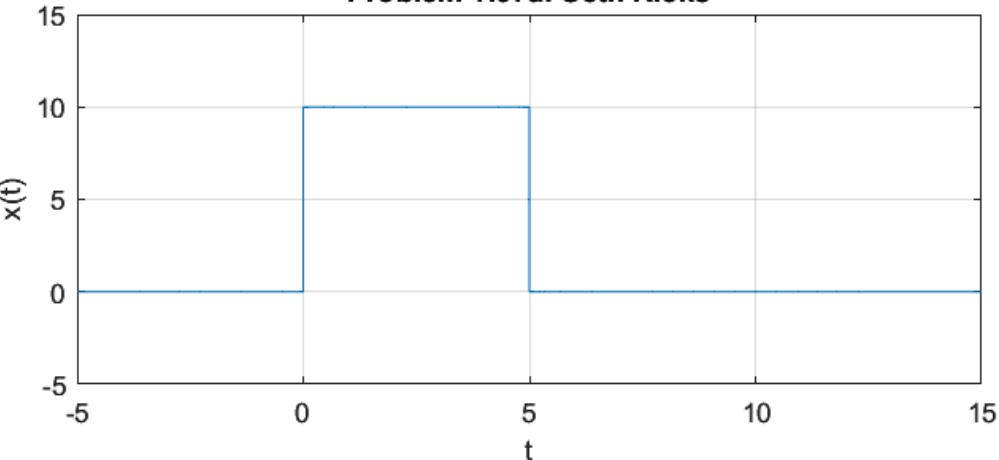
```
1  syms t;
2  subplot(2,1,1)
3  unit_step = 10 * (heaviside(t) - heaviside(t - 5));
4  fplot(unit_step, [-5 15]);
5  ylim([-5 15])
6  title('Problem 1.97a: Seth Ricks');
7  xlabel('t');
8  ylabel('x(t)');
9  grid on;
```

Part (b)

```
10 t = -5:0.01:15; % Time
11 x = 10 * (t >= 0 & t <= 5); % True for x>=0 and t <=5, false otherwise
12 subplot(2,1,2)
13 plot(t, x);
14 ylim([-5 15])
15 xlim([-5 15])
16 title('Problem 1.97b: Seth Ricks');
17 xlabel('t');
18 ylabel('x(t)');
19 grid on;
```

Figure

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**Problem 1.97a: Seth Ricks****Problem 1.97b: Seth Ricks**