

### 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)

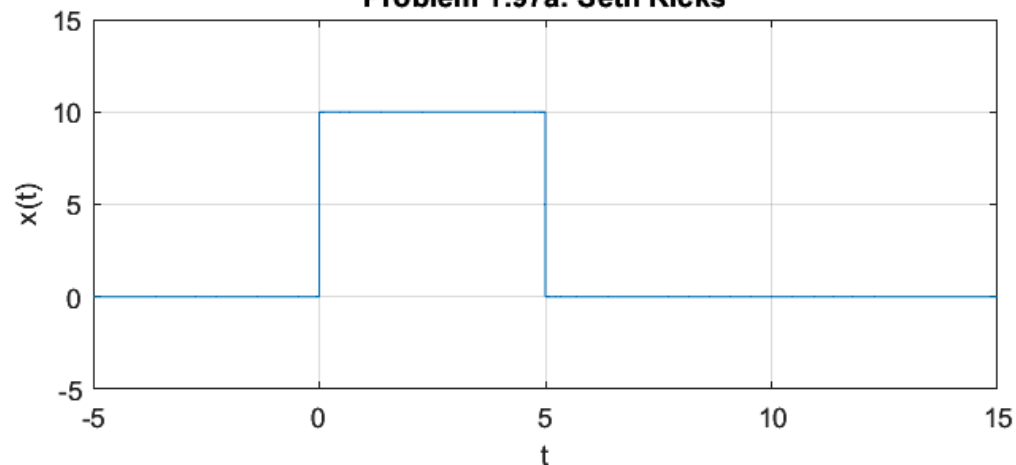
```
1 syms t;
2 subplot(2,1,1)
3 unit_step = 10 * (heaviside(t) - heaviside(t - 5));
4 fplot(unit_step, [-5 15]);
5 ylim([-5 15])
6 title('Problem 1.97a: Seth Ricks');
7 xlabel('t');
8 ylabel('x(t)');
9 grid on;
```

### 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;
```



### Problem 1.97a: Seth Ricks



### Problem 1.97b: Seth Ricks

