

## Using Step Functions as Switches

**Quiz:** What is the equation for the function which agrees with  $f(t)$  between  $a$  and  $b$  (assume  $a < b$ ) and is zero outside this window?

**Choices:**

- a)  $(u(t - b) - u(t - a))f(t)$
- b)  $(u(t - a) - u(t - b))f(t - a)$
- c)  $(u(t - a) - u(t - b))f(t)$
- d)  $u(t - a)f(t - a) - u(t - b)f(t - b)$
- e) none of these

**Answer:** (c):  $(u(t - a) - u(t - b))f(t)$ .

The box function  $u(t - a) - u(t - b)$  is 1 between  $a$  and  $b$  and 0 outside it.

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