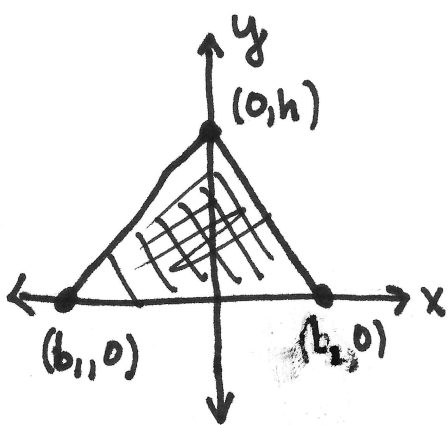


Quiz 3 Solution
MATH 2222E Fall 2015

①



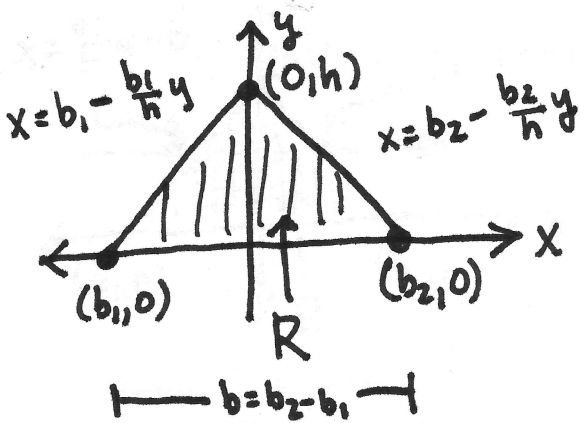
② left leg

line between $(b_1, 0)$ and $(0, h)$ has slope $m = -\frac{h}{b_1}$
and so has equation $y = -\frac{h}{b_1}x + h$

right leg

line between $(b_2, 0)$ and $(0, h)$ has slope $m = -\frac{h}{b_2}$
and so has equation $y = -\frac{h}{b_2}x + h$.

③



$$\text{Area}(R) = \iint_R 1 \, dA$$

$$= \int_0^h \int_{b_1 - \frac{b_1}{h}y}^{b_2 - \frac{b_2}{h}y} 1 \, dx \, dy$$

$$= \int_0^h (b_2 - \frac{b_2}{h}y) - (b_1 - \frac{b_1}{h}y) \, dy$$

$$= \int_0^h b - \frac{b}{h}y \, dy$$

$$= by - \frac{b}{2h}y^2 \Big|_0^h$$

$$= bh - \frac{bh^2}{2h} = bh - \frac{bh}{2} = \frac{bh}{2},$$

as was to be shown.