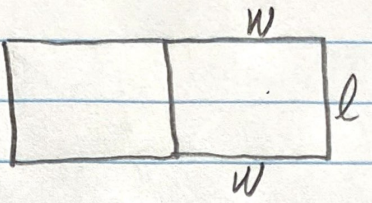
Practice 1a-1d, pg. 115-21

1a) $l = 1000 - 2w$ (only fencing 3 sides)



b) $A(w) = w(1000-2w)$.

$= 1000w - 2w^2$

$A(w) = -2w^2 + 1000w$

Since the coefficient of w^2 is negative, $A(w)$ will have a maximum.

c) $w = 0$ $\quad 1000 - 2w = 0$

$-1000 \quad -1000$

$(0,0)$ and $(500,0)$ $\quad \frac{-2w}{-2} = \frac{-1000}{-2}$

$w = 500$

If the width was 0 feet or 500 feet, there would be no enclosed dog park, so no area.

d) $w = \frac{0+500}{2} = 250$

$l = 1000 - 2(250)$

$l = 500$

$A(w) = 250(500)$

width = 250 feet

length = 500 feet

Area = 125,000 feet^2