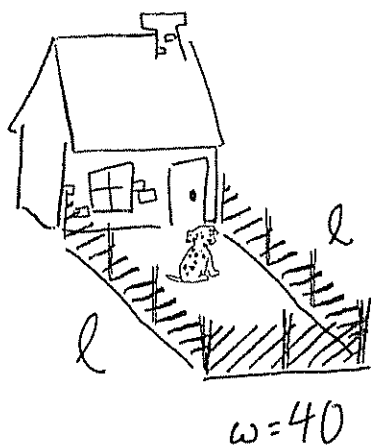


Math 34A Quiz 1

Name: Ellie Grano

Section Time: TR 8:30-9:20

1. Sally has a new puppy Spot and wants to build a three-sided fence around her rectangular backyard so Spot can run around. Her house is 40 feet wide. She is not sure what length she wants to make her backyard yet. She wants enough room for Spot to roam, but is concerned about paying too much for the fence. The type of fence she wants to use costs \$3 per foot. Please write the total cost of the fence in terms of the area of the backyard.



$$\text{area} = \text{length} \times \text{width}$$

$$A = lw$$

$$A = 40l$$

$$\frac{A}{40} = l$$

$$\begin{aligned} \text{The total length of fence} \\ = 2l + 40 \end{aligned}$$

$$\begin{aligned} \text{Then the total cost of the fence} \\ = \$3 \cdot [2l + 40] \end{aligned}$$

To write this in terms of area,
we replace l with $\frac{A}{40}$ (From above)

$$\text{total cost} = 3 \cdot \left[2 \cdot \left(\frac{A}{40} \right) + 40 \right]$$

$$\text{total cost} = \frac{3A}{20} + 120$$