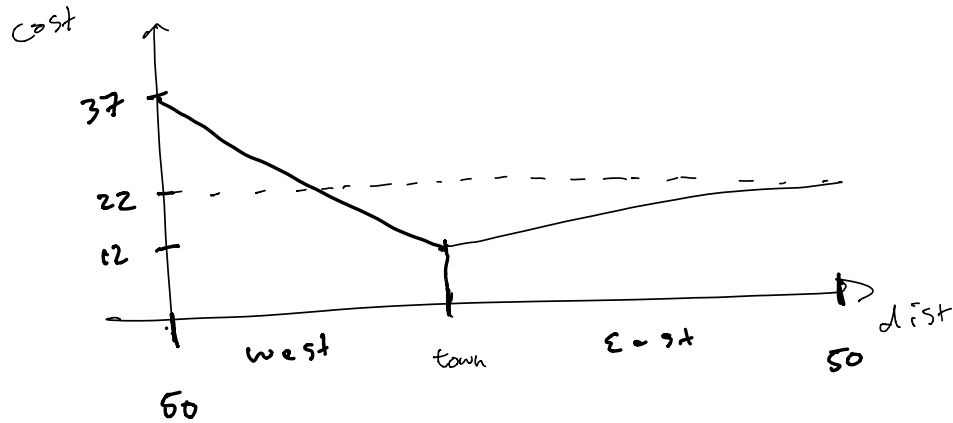


Graph



$$\text{cost west: } 12 + M \cdot .5$$

$$\rightarrow \text{Max west: } 12 + 50(.5) = 12 + 25 = \underline{\underline{37}}$$

$$\text{cost east: } 12 + M \cdot .2$$

$$\rightarrow \text{Max east: } 12 + 50(.2) = 12 + 10 = \underline{\underline{22}}$$

Market Area

Buy west if

$$12 + M \cdot .5 \leq 20 \Rightarrow M \cdot .5 \leq 8$$

$$\Rightarrow \boxed{M \leq 16}$$

Buy east if

$$12 + M \cdot .2 \leq 20 \Rightarrow M \cdot .2 \leq 8$$

$$\Rightarrow \boxed{M \leq 40}$$