



$$\begin{aligned}
 V &= (40-2x)(25-2x)x \\
 &= (1000-130x+4x^2)x \\
 &= 4x^3-130x^2+1000x
 \end{aligned}$$

$$0 < x < \frac{25}{2}$$

$$V' = 12x^2 - 260x + 1000 = 4(3x^2 - 65x + 250)$$

$$V' = 0 \text{ のとき } x = \frac{65 \pm \sqrt{4225 - 3000}}{6} = \frac{65 \pm 35}{6} = \frac{30}{6}, \frac{100}{6} = 5, \frac{50}{3}$$

Vの増減表は左表

Vが最大となるxの値は5

x	0	...	5	...	$\frac{25}{2}$
V'		+	0	-	
V	0	↗	最大	↘	0

$$\begin{array}{r}
 65 \\
 \times 65 \\
 \hline
 325 \\
 390 \\
 \hline
 4225 \\
 \times 12 \\
 \hline
 500 \\
 25 \\
 \hline
 3000 \\
 \hline
 51225 \\
 5245 \\
 \hline
 749 \\
 7
 \end{array}$$