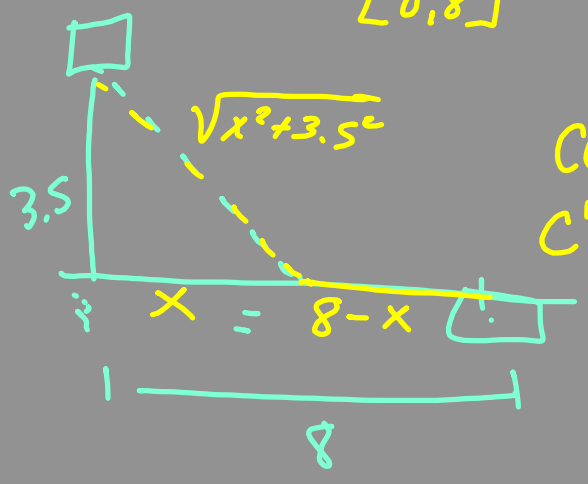

$$C(x) = 2400\sqrt{x^2+3.5^2} + 1200(8-x)$$

$$C(x) = 2400(x^2+12.25)^{1/2} + 1200(8-x)$$

$$C'(x) = 1200(x^2+12.25)^{-1/2} \cdot 2x + 1200 \cdot -1$$

$$\frac{2400x}{\sqrt{x^2+12.25}} = 1200$$

$$\frac{2400x}{1200} = \frac{1200\sqrt{x^2+12.25}}{1200}$$

$$(2x)^2 = \left(\sqrt{x^2+12.25}\right)^2$$

$$4x^2 = x^2 + 12.25$$

$$\sqrt{\frac{3x^2}{3}} = \sqrt{\frac{12.25}{3}}$$

$$x = 2.02$$

January 13, 2022

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Optimization Review

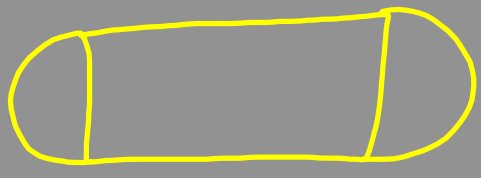
6 problems

Area/Volume

Business $P = R - C$

Inc/Dec

Distance



Picture

Func

2nd eq = #

Interval

Crit Pts

Test interval/crit pts

January 13, 2022