

Primary Secondary

$$P = 2x + y \quad 180000 = xy$$

$$y = \frac{180000}{x}$$

$$P = 2x + \frac{180000}{x}$$

$$\frac{dP}{dx} = 2 - \frac{180000}{x^2}$$

$$0 = 2 - \frac{180000}{x^2}$$

$$\frac{180000}{x^2} = 2$$

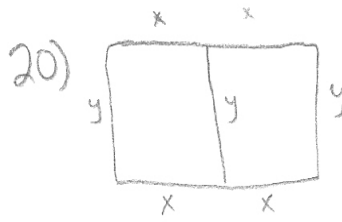
$$2x^2 = 180000$$

$$x^2 = 90000$$

$$x = 300$$

$$180000 = 300y$$

$$y = 600$$



Secondary

$$P = 4x + 3y$$

$$200 = 4x + 3y$$

$$4x = 200 - 3y$$

$$x = 50 - \frac{3}{4}y$$

$$x = 50 - \frac{3}{4} \left( \frac{100}{3} \right)$$

$$x = 50 - 25$$

$$x = 25$$

Primary

$$A = 2xy$$

$$A = 2 \left( 50 - \frac{3}{4}y \right) y$$

$$A = 2 \left( 50y - \frac{3}{4}y^2 \right)$$

$$A = 100y - \frac{6}{4}y^2$$

$$\frac{dA}{dy} = 100 - \frac{12}{4}y$$

$$0 = 100 - 3y$$

$$3y = 100$$

$$y = \frac{100}{3} = 33\frac{1}{3}$$