



$$x^2 + y^2 = 25$$

$$y^2 = 25 - x^2$$

$$y = \sqrt{25 - x^2}$$

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}x\sqrt{25-x^2}$$

$$A' = \frac{1}{2}x\left(\frac{1}{2}(25-x^2)^{-\frac{1}{2}}(-2x)\right) + \sqrt{25-x^2}\left(\frac{1}{2}\right)$$

$$= \frac{-x^2}{2\sqrt{25-x^2}} + \frac{(\sqrt{25-x^2})^2}{2\sqrt{25-x^2}}$$

$$= \frac{-x^2 + 25 - x^2}{2\sqrt{25-x^2}}$$

$$A' = \frac{25 - 2x^2}{2\sqrt{25-x^2}}$$

$$25 - 2x^2 = 0$$

$$x^2 = \frac{25}{2}$$

$$x = \frac{5}{\sqrt{2}}$$

$$y = \sqrt{25 - \left(\frac{5}{\sqrt{2}}\right)^2}$$

$$= \sqrt{25 - \frac{25}{2}}$$

$$\sqrt{\frac{25}{2}}$$

$$y = \frac{5}{\sqrt{2}}$$