



$$x^2 + 4hx = 2028$$

$$\frac{4hx}{4x} = \frac{2028 - x^2}{4x}$$

$$h = \frac{2028 - x^2}{4x}$$

$$V = x^2 h$$

$$V = x^2 \left(\frac{2028 - x^2}{4x} \right)$$

$$V = x \left(\frac{2028 - x^2}{4} \right)$$

$$V = x \left(\frac{2028}{4} - \frac{1}{4}x^2 \right)$$

$$V = x \left(507 - \frac{1}{4}x^2 \right)$$

$$V = 507x - \frac{1}{4}x^3$$

$$V' = 507 - \frac{3}{4}x^2 = 0$$

$$\frac{3}{4}x^2 = 507$$

$$\frac{4}{3} \cdot \frac{3}{4}x^2 = 507 \cdot \frac{4}{3}$$

$$\sqrt{x^2} = \sqrt{676}$$

$$x = 26$$

$$h = \frac{2028 - 26^2}{4(26)}$$

$$h = \frac{1352}{104}$$

$$h = 13$$

$$V = x^2 h = 26^2 (13) = \boxed{8788 \text{ cm}^3}$$