

$$11. f(x) = 9 - x^2 \quad [0, 3]$$

$$9) \text{ AVERAGE VALUE} = \frac{1}{b-a} \int_a^b f(x) dx$$
$$= \frac{1}{3-0} \int_0^3 (9-x^2) dx$$

$$= \frac{1}{3} \left[9x - \frac{1}{3}x^3 \right]_0^3$$

$$= \frac{1}{3} \left[\left(9 \cdot 3 - \frac{1}{3}(3)^3 \right) - \left(9 \cdot 0 - \frac{1}{3}(0)^3 \right) \right]$$

$$= \frac{1}{3} [27 - 9]$$

$$= \textcircled{6}$$

$$b) \quad 9 - x^2 = 6$$

$$9 - 6 = x^2$$

$$3 = x^2$$

$$\pm\sqrt{3} = x$$

$$\textcircled{x = \sqrt{3}}$$