



$$O_1P = \sqrt{O_1O_2^2 - O_2P^2}$$

$$O_1O_2 = 4 + 12 = 16$$

$$O_2P = M_2O_2 - M_1O_1 = 12 - 4 = 8$$

$$O_1P = \sqrt{16^2 - 8^2} = \sqrt{192} = 8\sqrt{3}$$

$$M_1M_2 = O_1P = 8\sqrt{3}$$

$$\cos \hat{O}_2 = \frac{8}{16} = \frac{1}{2}$$

$$\hat{O}_2 = 60^\circ$$

$$\hat{O}_1 = 120^\circ$$

$$A_{tr} = \frac{(16+4) \cdot 8\sqrt{3}}{2} = 80\sqrt{3}$$

$$A_{sector} SO_2M_2 = \frac{A_{circ}(O_2)}{6} = \frac{\pi \cdot 12^2}{6}$$

$$A_{sector} SO_1M_1 = \frac{A_{circ}(O_1)}{3} = \frac{\pi \cdot 4^2}{3}$$

$$A_{tr} - (A_{S_1} + A_{S_2}) = 80\sqrt{3} - \frac{\pi \cdot 4^2}{3} (3^2 + 1)$$

$$80\sqrt{3} - \frac{\pi \cdot 4^2}{3} \cdot 10 = 80\sqrt{3} - \frac{\pi \cdot 160}{3}$$