



$$C_y = A_1 Y_1 + A_2 Y_2 + A_3 Y_3 \div \Sigma A$$

$$C_x = A_1 X_1 + A_2 X_2 + A_3 X_3 \div \Sigma A$$

$$A_1 = (800 \text{ mm})(700 \text{ mm}) = 560,000 \text{ mm}^2$$

$$C_{x1} = \frac{800}{2} = 400 \text{ mm}$$

$$C_{x2} = \frac{700}{2} = 350 \text{ mm}$$

400mm 200mm

$$A_2 = \frac{\pi r^2}{2} \rightarrow \frac{3.1416 (300 \text{ mm})^2}{2} = 141,372 \text{ mm}^2$$

$$C_{gx} = \frac{560,000 \text{ mm}^2 (400) + 141,372 (672.68) + 40,000 (66.66)}{378,628}$$

$$X_2 = \frac{4(300 \text{ mm})}{3(3.1416)} = 127.32 - 800 \text{ mm} = 672.68$$

$$Y_2 = 300 + 100 = 400 \text{ mm}$$

$$A_3 = \frac{400 \times 200}{2} = 40,000 \text{ mm}^2$$

$$C_{gy} = 338.403 \text{ mm}$$

$$A_3 = \frac{200}{3} = 66.66$$

$$C_{gy} = \frac{560,000 (350) - 141,372 (400) + 40,000 (133.333)}{378,628}$$

$$Y_3 = \frac{400}{3} = 133.333$$

$$\Sigma A = 560,000 \text{ mm}^2 - 141,372 \text{ mm}^2 - 40,000 \text{ mm}^2$$

$$C_{gy} = 354.220 \text{ mm}$$