**Zadatak 7.18**

Zadano:   $b = 24$ cm, $h = 36$ cm,
$b_1 = b/4$, $h_1 = h/4$, $d = 8$ cm.

*Rješenje*:

$A = 813,735 \, \text{cm}^2$,

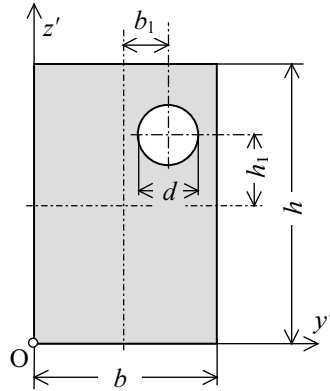$y_S = 11,63 \, \text{cm}$,    $z_S = 17,46 \, \text{cm}$,

$I_y = 88788 \, \text{cm}^4$,  $I_z = 39350 \, \text{cm}^4$,

$I_{yz} = -2882 \, \text{cm}^4$,

$I_1 = 88955 \, \text{cm}^4$,  $I_2 = 39183 \, \text{cm}^4$,

$\varphi_o = 3,325°$.



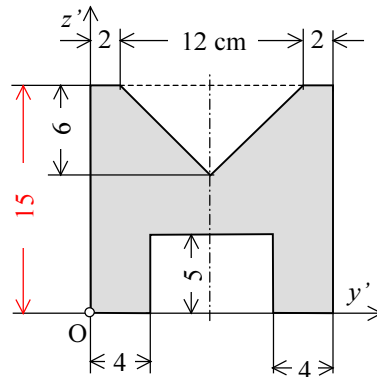Slika uz zadatak 7.18

**Zadatak 7.19**

*Rješenje*:

$A = 164 \, \text{cm}^2$,

$y_S = 8 \, \text{cm}$,    $z_S = 7,5122 \, \text{cm}$,

$I_z = I_1 = 4690,67 \, \text{cm}^4$,

$I_y = I_2 = 2255,65 \, \text{cm}$,

$I_{yz} = 0$,    $\varphi_o = 0°$.



Slika uz zadatak 7.19
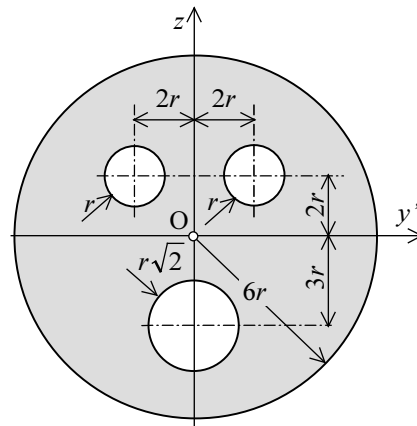
**Zadatak 7.20**

Zadano: $r$ .

*Rješenje:*

$A = (6r)^2 \pi - \left(\sqrt{2}r\right)^2 \pi - 2 \cdot r^2 \pi = 32r^2 \pi$,

$y_S = 0$,  $z_S = \dfrac{r}{16}$,

$I_y = I = 296,375r^4 \pi$,

$I_z = I_1 = 314,5r^4 \pi$,  $I_{yz} = 0$,

$\varphi_o = 0°$ .



Slika uz zadatak 7.20