

# Eindexamen wiskunde B1-2 havo 2003-II

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## Compactheid

$$15. A_B = 6^2 + 4 \cdot \frac{1}{2} \cdot 6 \cdot \sqrt{3^2 + 4^2} = 96 = A_A$$

$$I_B = \frac{1}{3} \cdot 6^2 \cdot 4 = 48 \neq I_A = 58,5$$

$$16. \frac{4}{3} \pi r^3 = 58,5 \quad \rightarrow \quad r = 2,41$$

$$C = \frac{4 \cdot \pi \cdot (2,41)^2}{96} = 0,759$$

$$17. C = \frac{4,84 \cdot (k^3)^{2/3}}{6k^2} = \frac{4,84 \cdot k^2}{6k^2} = 0,81$$

$$18. C = \frac{4,84 \cdot (6 \cdot 10 \cdot x + \frac{1}{2} \cdot 4 \cdot 60)^{2/3}}{184 + 32x}$$

$$\frac{dC}{dx} = \frac{4,84 \cdot \frac{2}{3} \cdot (60x + 120)^{-1/3} \cdot 60 \cdot (184 + 32x)}{(184 + 32x)^2} + \frac{32 \cdot 4,84 \cdot (60x + 120)^{2/3}}{(184 + 32x)^2} = 0$$

Met de GR levert dit:  $x = 5,5$

en  $C_{\max} = 0,8$  voor  $C(5,5)$