



$$Z = \frac{5.2}{\sin 75^\circ} = \underline{5.3834 \text{ m}}$$

$$\begin{aligned} F &= \rho g A Z \sin \theta \\ &= 1000 \times 9.81 \times \frac{\pi}{4} (0.3)^2 \\ &\quad \times 5.3834 \times \sin 75^\circ \\ &= \underline{3,606 \text{ N}} \end{aligned}$$

$$I_c = \frac{\pi}{64} d^4 = \frac{\pi}{64} (0.3)^4 = 0.000398 \text{ m}^4$$

$$h-Z = \frac{I_c}{A Z} = \frac{0.000398}{\frac{\pi}{4} (0.3)^2 \times 5.3834} = 0.00104 \text{ m}$$

$$M = F \times \left( \frac{d}{2} + (h-Z) \right)$$

$$= 3606 \left( \frac{0.3}{2} + 0.00104 \right) = \underline{544.7 \text{ Nm}}$$