6. Let $\ell_1 = 1.5\,\text{m}$ and $\ell_2 = 5.0 - 1.5 = 3.5\,\text{m}$. We denote the tension in the cable closer to the window as F_1 and that in the other cable as F_2. The force of gravity on the scaffold itself (of magnitude $m_s g$) is at its midpoint, $\ell_3 = 2.5\,\text{m}$ from either end.

   (a) Taking torques about the end of the plank farthest from the window washer, we find

$$F_1 = \frac{m_w g \ell_2 + m_s g \ell_3}{\ell_1 + \ell_2} = \frac{(80\,\text{kg})\left(9.8\,\text{m/s}^2\right)(3.5\,\text{m}) + (60\,\text{kg})\left(9.8\,\text{m/s}^2\right)(2.5\,\text{m})}{5.0\,\text{m}} = 8.4 \times 10^2\ \text{N}\ .$$

   (b) Equilibrium of forces leads to

$$F_1 + F_2 = m_s g + m_w g = (60\,\text{kg} + 80\,\text{kg})\left(9.8\,\text{m/s}^2\right) = 1.4 \times 10^3\ \text{N}$$

   which (using our result from part (a)) yields $F_2 = 5.3 \times 10^2\,\text{N}$.