## Solutions

**2.1**

- $E_1 = 0.55 \times 230 + 0.45 \times 2.5 = 127.6$ GPa.

**2.2**

- $E_2 = 230 \times 2.5 / (0.55 \times 2.5 + 0.45 \times 230) = 575 / 104.9 = 5.48$ GPa.
- Ratio $127.6 / 5.48 = 23.3$.

**2.3**

- $P_s = \exp[-(200/250)^8] = \exp[-0.8^8] = \exp[-0.168] = 0.846$.

**2.4**

- Nylon's $T_g$ (55°C) sits near service temperature: stiffness and creep change across the transition, so the spring rate must be re-read hot.
- $E_1$ and $E_2$ differ by more than an order of magnitude - one number would mislead in the other direction.



exercises.lol exercises.com.cn