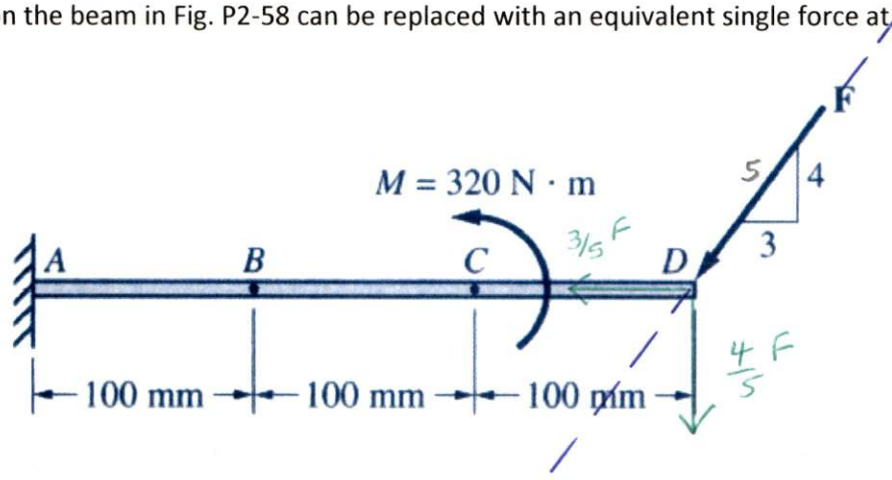
2-58

If the force-couple exerted on the beam in Fig. P2-58 can be replaced with an equivalent single force at B, find the magnitude of force F.

Solution.



$[\Sigma M_B = 0]$ $\quad 320\ \text{N}\cdot\text{m} - \frac{4}{5}F(0.2\ \text{m}) = 0$

$$F = \frac{5}{4}\frac{(320\ \text{N}\cdot\text{m})}{0.2\ \text{m}} = 2000\ \text{N}$$