4 Assume $0.75 F_p \le F_i \le 0.9 F_p$ where here
$F_p = A_s S_p = 245 \times 590 = 145$ kN.
$\therefore$ $109 \le F_i \le 130$ kN say $F_i \approx 120$ kN
If friction is "normal", then, from (2c)
$T = K F_i d = 0.2 \times 120 \times 20 = \underline{480}$ Nm
Use a tightening torque of 480 Nm, but realise the large errors in $F_i = 120$ kN which can arise in practice.

In order to find out how the load is shared between bolts and joint members we have to examine their stiffnesses. The joint is metal to metal so we may use (4) for frustum length $48/2 = 24$ mm

$$k_{j1 \text{ or } 2} = 207 \times 20 \times \frac{0.702 + 0.654 \frac{20}{24}}{1 - 0.12 \times 20/24} = 5740 \text{ kN/mm}$$

so, for the two joint cones in series
$1/k_j = 1/k_{j1} + 1/k_{j2} \implies k_j = \underline{2870}$ kN/mm

For the bolt, half the head & nut lengths is approx $0.5 \times 0.9 \times 20 = 9$ mm.
Assume 2 exposed threads, of length $2 \times 2.5 = 5$ mm
shank $L_s = 48 - 5 + 9 = 52$ mm $A = \frac{\pi}{4} \times 20^2 = 314$ mm^2
threads $L_t = 5 + 9 = 14$ mm $A = A_s = 245$ mm^2
$1/k_b = 1/k_{shank} + 1/k_{threads} = \Sigma L/AE$
$= (52/314 + 14/245)/207$
$\implies k_b = \underline{929}$ kN/mm

So, for one of the two joint assemblies
$1/k_e = 1/k_b + 1/k_j = 1/929 + 1/2870 \implies k_e = 702$ kN/mm
From (3a) with $P = 20$ kN (symmetry assumed)
$F_b = F_i + P\, k_e/k_j = 120 + 20 \times \frac{702}{2870} = 125$ kN
$F_j = F_i - P\, k_e/k_b = 120 - 20 \times \frac{702}{929} = \underline{105 \text{ kN}}$

Note that the nicety of considering the stiffness of exposed threads, and of ½ bolt head & nut, is probably unnecessary.