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Answer:

Given:

C=26 KN ,L_{10h} = 8000 h , n=300 rpm

Bearing life (L_{10})

$L10 = \frac{60\,n(L10h)}{10^6}$, $L10 = \frac{60x\ 300\ x\ 8000}{10^6}$ = 144 million rev.

Equivalent radial load

$C = P\,(L_{10})^{0.3}$, $P = 26000/(144)^{0.3}$ =5854.16 N

Fr= P =5854.16 N
