Solution for exercise 3.3.19 in Pitman

We apply the Normal approximation (the Central Limit Theorem (p.196). Let X_i denote the weight of the i'th passenger. The total load W is $W = \sum_{i=1}^{30} X_i$.

$$P(W > 5000) \overset{\sim}{=} 1 - \Phi\left(\frac{5000 - 30 \cdot 150}{55\sqrt{30}}\right) = 1 - \Phi(1.66) = 0.0485$$