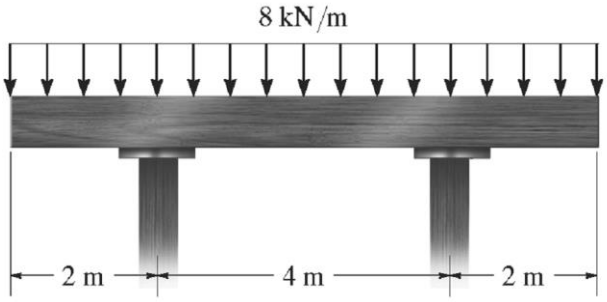
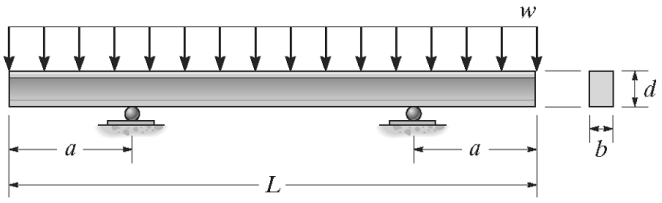
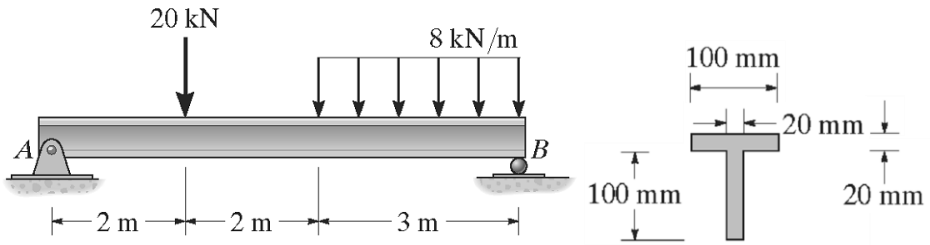
1. The simply supported beam is made of timber that has an allowable bending stress of 6.5 MPa and an allowable shearing stress of 500 kPa. Determine its dimensions if it is to be rectangular and have a height-to-width ratio of 1.25.【已知图示简支木梁的许用弯曲正应力为 6.5 MPa，许用弯曲切应力为 500 kPa，若该梁采用矩形截面，且高宽比定为 1.25，求截面尺寸。】



2. The beam is subjected to a uniform load *w*. Determine the placement *a* of the supports so that the shearing stress in the beam is as small as possible. What is this stress?【试求当图示梁中弯曲切应力的最大绝对值取最小值时的支撑位置 a，并求对应的最大弯曲切应力。】



3. The *T*-beam is subjected to the loading shown. Determine the maximum transverse shearing stress in the beam at the critical section.【试求图示 *T* 形梁中的最大弯曲切应力，并确定其所在截面。】



4. Determine the variation in the height *d* of a cantilevered beam that supports a concentrated force *P* at its end so that it has a constant maximum bending normal stress throughout its length. The beam has a constant width b_0.【欲使图示悬臂梁在各横截面上均取等值最大弯曲正应力，试求其高度 *d* 沿长度方向的变化曲线。设梁的宽度为一常数 b_0。】