7. (a) The force of the worker on the crate is constant, so the work it does is given by $W_F = \vec{F} \cdot \vec{d} = Fd \cos \phi$, where $\vec{F}$ is the force, $\vec{d}$ is the displacement of the crate, and ϕ is the angle between the force and the displacement. Here $F = 210\,\mathrm{N}$, $d = 3.0\,\mathrm{m}$, and $\phi = 20°$. Thus $W_F = (210\,\mathrm{N})(3.0\,\mathrm{m}) \cos 20° = 590\,\mathrm{J}$.

(b) The force of gravity is downward, perpendicular to the displacement of the crate. The angle between this force and the displacement is $90°$ and $\cos 90° = 0$, so the work done by the force of gravity is zero.

(c) The normal force of the floor on the crate is also perpendicular to the displacement, so the work done by this force is also zero.

(d) These are the only forces acting on the crate, so the total work done on it is $590\,\mathrm{J}$.