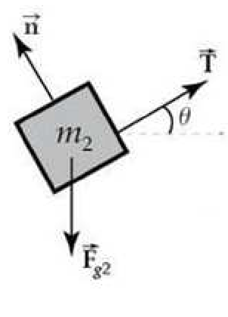
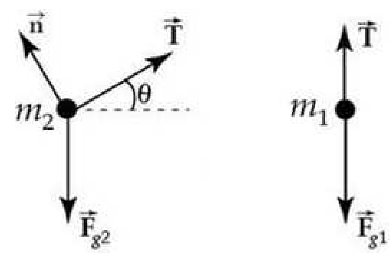
Read the problem carefully at least once.
Be sure to notice quantities that are known and those we're being asked to find. The known quantities are the mass m_2 of the block on the plane and the angle of incline θ. The unknown quantity we're asked to find is the mass m_1 of the hanging block.

Draw a picture of the system, identify the object of interest, and indicate forces with arrows.
Each of the masses is an object of interest in this problem. The figure shows pictures of them with the angle of incline and indicates the forces acting on each of them.



Label each force in the figure.
Each force in the figure is labeled in a way intended to identify the associated physical quantity. The magnitudes of the normal and tension forces are n and T, respectively, and the magnitudes of the gravity forces are F_{g1} and F_{g2}.

Draw free-body diagrams (FBDs) of the objects of interest.
The FBDs for m_1 and m_2 are shown in the figure.



Apply Newton's second law.
Newton's second law can be applied to these free-body diagrams in any order we choose. The free-body diagram for m_1 appears to be the least complicated, so let's use it first.

Applying Newton's second law to an object in equilibrium means that we should first take $\sum \overrightarrow{\mathbf{F}} = 0$ and write out each component. We'll take the positive y-direction to be straight up. There are no forces with x-components on the FBD for m_1. The y-component of Newton's second law applied to m_1 is

$$T - F_{g1} = 0,$$

so that

$$F_{g1} = T.$$

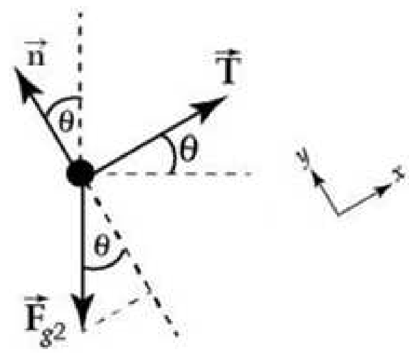
Because $F_{g1} = m_1 g$, we have

$$m_1 g = T$$

and

$$m_1 = \frac{T}{g}.$$

The mass m_1 is the unknown we are to determine and we have obtained an expression for it. However, because m_1 is expressed in terms of the tension T, we cannot determine its value until T is known. We'll determine T by applying Newton's second law to the other FBD, that is, the free-body diagram for m_2.



Applying Newton's second law to the free-body diagram for m_2, we take $\sum \overrightarrow{\mathbf{F}} = 0$ and write out each component. In this case, it's convenient to use a tilted coordinate system with the x-axis directed up the incline and the y-axis perpendicular to the incline, along the direction of the normal force $\overrightarrow{\mathbf{n}}$. This coordinate system, along with the free-body diagram for m_2, is shown in the figure.

The x-component of Newton's second law is then

$$T - F_{g2} \sin\theta = 0.$$

From this result, knowing that $F_{g2} = m_2 g$, gives the following.

$$T = m_2 g \sin\theta$$

In the next step, this expression for T will be used to determine the unknown m_1.

Solve for the desired unknown quantity and substitute the numbers.
Our unknown quantity is the mass m_1 of the hanging block. Substituting the known quantities gives

$$\begin{aligned} m_1 &= \frac{T}{g} = \frac{m_2 g \sin\theta}{g} \\ &= m_2 \sin\theta \\ &= (3.43\ \text{kg})\,(\sin 37.5^\circ) = 2.09\ \text{kg}. \end{aligned}$$