

Inclined Planes

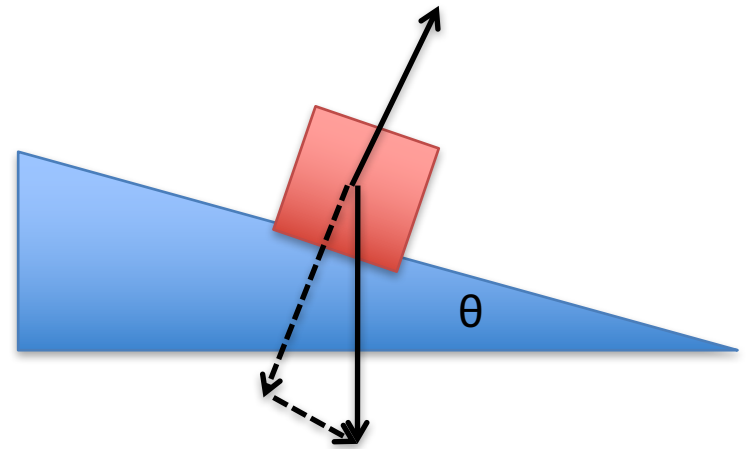
Inclined Planes

- These are two dimensional problems. The coordinate axis is tilted down the incline, therefore all motion is on the x-axis. $a_y = 0$.
- X-axis: used to find acceleration
- Y-axis: used to find normal force

A block slides down an incline.

What are the forces acting on it?

- **Ex:** No friction



A 2 kg block is placed on a 2.5 m frictionless track that is inclined at 20° above the horizontal. Determine the acceleration of the block as it slides down the track.

How fast is the block going at the bottom of the incline?

A 6 kg block is pushed up an incline with a force of 100 N parallel to the plane. The force of friction acting on the block is 8 N, and the plane is inclined at 30° .

What is the acceleration of the block?

The block is now released from rest at the top of the incline.

What is its acceleration down the incline?