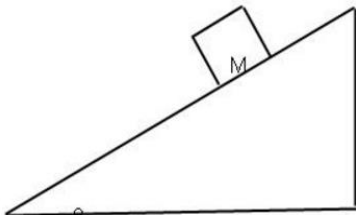


3. A block of mass of 5kg is released from the top of an inclined plane of length of 1m and an angle of 25° . The surface of contact is frictionless



- Draw the free body diagram for the block
- Find the magnitude of the gravitational force
- Find the magnitude of the perpendicular component of the gravitational force?
- Find the magnitude of the normal force
- Find the magnitude of the acceleration of the object
- If the block reaches the bottom of the plane in 2s, what is the final velocity of the block at the bottom of the inclined plane?

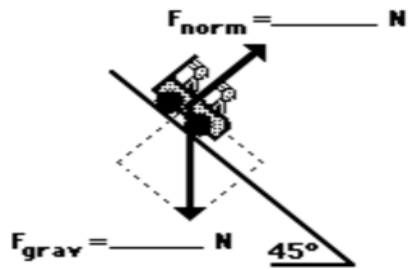
4. Johnny is pushing a 20kg block up a 30° frictionless ramp.



- Draw the free body diagram for the block
- What is the weight of the block?
- Calculate the components of the gravitational force
- What is the magnitude of the normal force?
- If he is pushing with 120 N, what is the magnitude of the acceleration of the block?

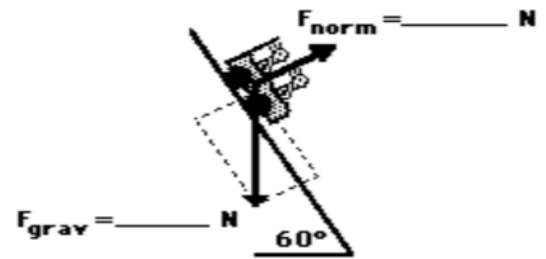
5. Calculate the variables (Normal Force, Net Force, and Acceleration) for the following scenarios:

Diagram A



$m = 1000 \text{ kg}$
 $a = \text{_____ m/s/s}$
 $F_{\text{net}} = \text{_____ N}$

Diagram B



$m = 1000 \text{ kg}$
 $a = \text{_____ m/s/s}$
 $F_{\text{net}} = \text{_____ N}$
