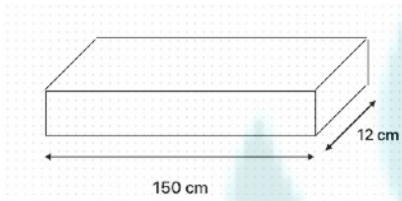


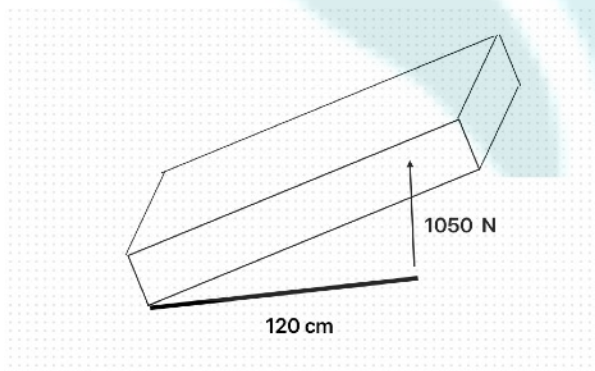
MYP - Forces and its impact

Question 1 [10 marks]

Figure shows a concrete slab resting on the ground.

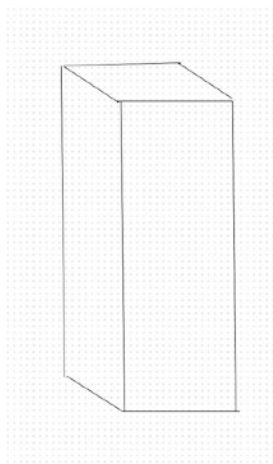


- The weight of the concrete block is 1850 N.
Calculate the pressure on the ground due to the concrete block. State correct unit. [3]
- A builder starts to raise one end of the block.
He uses a force of 1050 N at a perpendicular distance of 120 cm from the pivot As shown in figure.



Calculate the moment of the 1050 N force about the pivot. State correct unit. [3]

- Describe how the builder can use a smaller force to lift the block. [2]
- The builder positions the block as shown in figure below. State why this block is less stable than the previous block. [2]



Question 2 [14 marks]

Open the below simulation and understand the impact of mass m_1 and m_2 on motion. Do some trials to check the impact. Post that answer the questions that follow.

<https://ophysics.com/f3.html>

Qa. [2 marks]

Identify two forces acting on mass m_2 when incline angle is zero.

Qb. [2 marks]

Identify two forces acting on the mass m_1 when incline angle is zero.

Qc. [3 marks]

By trials find the relation between two masses to start the mass m_1 to go down. Explain if friction has any role to play in this .

Qd. [3 marks]

Now set the angle of inclination to 30 degrees.

Explain the difference in the relation between the masses now with reference to forces keeping friction constant.

Qe. [2 marks]

Now set an angle of inclination to 60° and explain the difference in the relation between the masses reference to forces while keeping the friction value same.

Qf. [2 marks]

What can you conclude from the above two answers