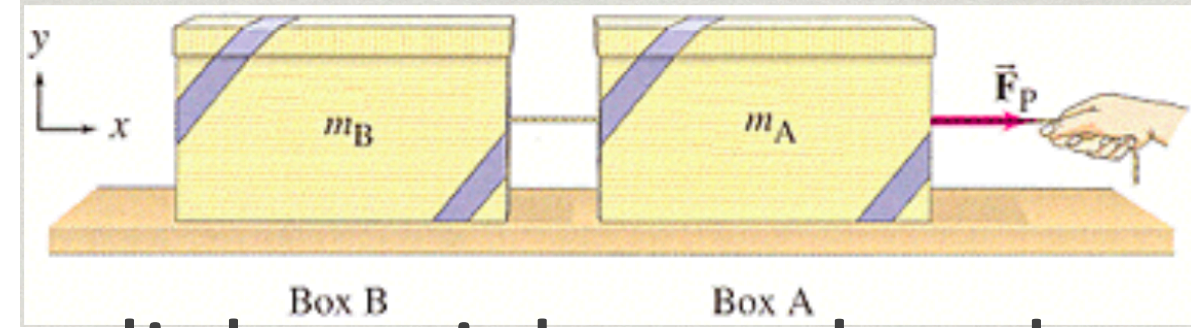




Why doesn't the  
balloon pop?

Pressure = Force/Area  
◦  $\text{N/m}^2$



Two boxes are connected by a lightweight cord and are being pulled by a force of 40 N on a frictionless table. The boxes have masses of 12.0 kg (box B) and 10.0 kg (box A).

A. Find the acceleration of each box.

- 1.82 m/s<sup>2</sup>

B. What's the force of tension in the cord between the boxes?

- 21.8 N

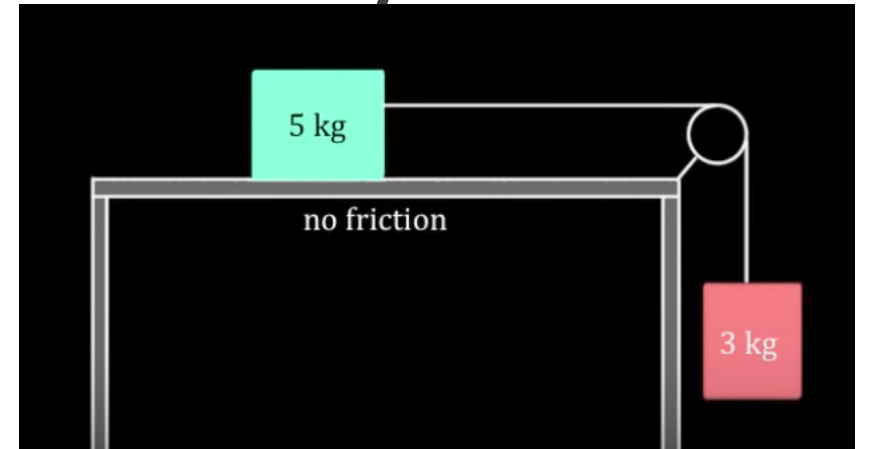
A 5 kg mass is being pulled horizontally across a frictionless table by a 3 kg mass dropped over a pulley. What is the acceleration of the system and the tension in the string?

- $3.86 \text{ m/s}^2$

- $F_T = 15.4 \text{ N}$

- An easy way to solve systems problems -

[https://www.youtube.com/watch?time\\_continue=3&v=UrfLAlk2b\\_8](https://www.youtube.com/watch?time_continue=3&v=UrfLAlk2b_8)



The 5 kg mass and 3 kg mass are now on either end of a rope over a pulley. What is the acceleration of the system and tension in the rope?

- $2.45 \text{ m/s}^2$
- $F_T - F_{G \text{ 5kg}} = ma$
- $F_T = 5\text{kg} \times 9.81\text{m/s}^2 + 5\text{kg} \times (-2.45\text{m/s}^2)$
- $F_T = 36.75\text{N}$

