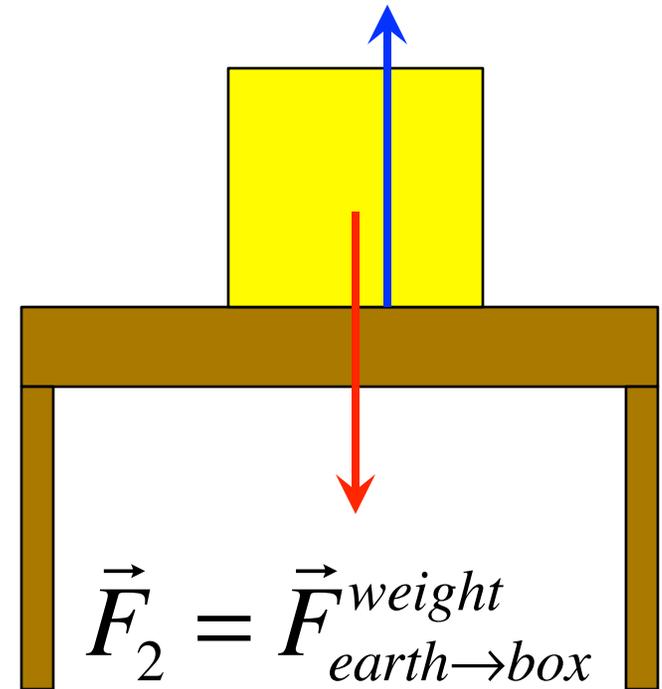




Compare forces 1 and 2

1. Force 1 is bigger
2. Force 2 is bigger
3. They are equal in magnitude
4. There is not enough information to tell.

$$\vec{F}_1 = \vec{F}_{table \rightarrow box}^{normal}$$



$$\vec{F}_2 = \vec{F}_{earth \rightarrow box}^{weight}$$

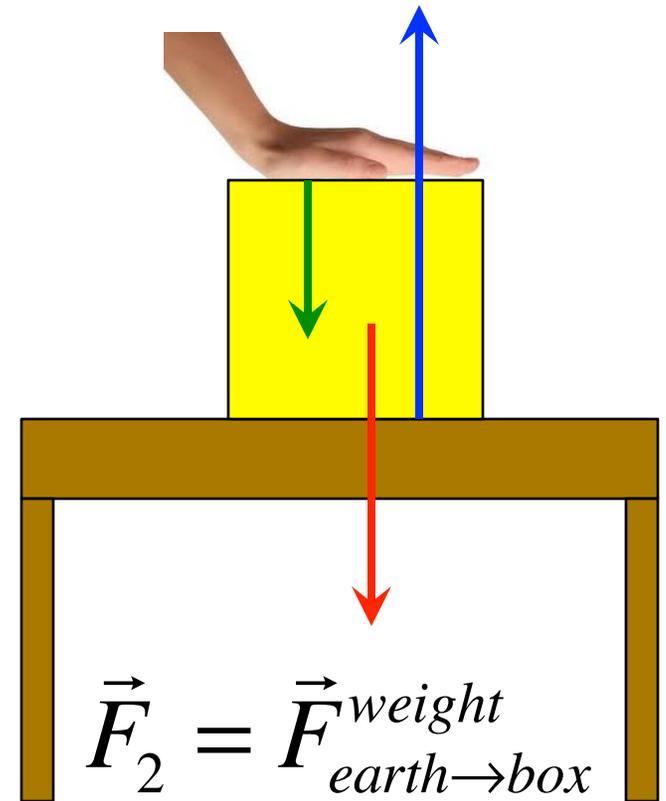
Compare forces 1 and 2



1. Force 1 is bigger
2. Force 2 is bigger
3. They are equal in magnitude
4. There is not enough information to tell.

$$\vec{F}_3 = \vec{F}_{hand \rightarrow box}^{normal}$$

$$\vec{F}_1 = \vec{F}_{table \rightarrow box}^{normal}$$

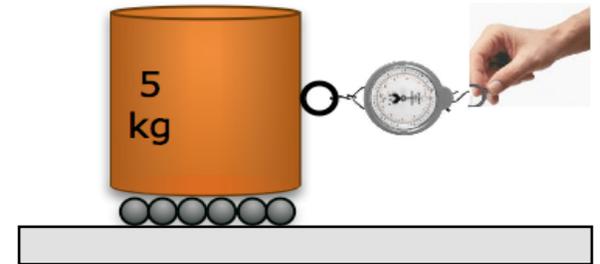


$$\vec{F}_2 = \vec{F}_{earth \rightarrow box}^{weight}$$

You are pulling the block
along a table

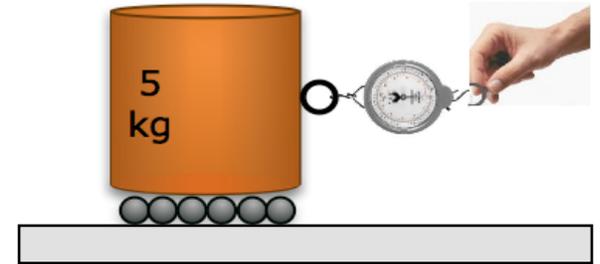
To ensure that the block speeds up
at a constant rate you need to

1. Pull with a decreasing force.
2. Pull with a constant force.
3. Pull with an increasing force.
4. Not pull at all.



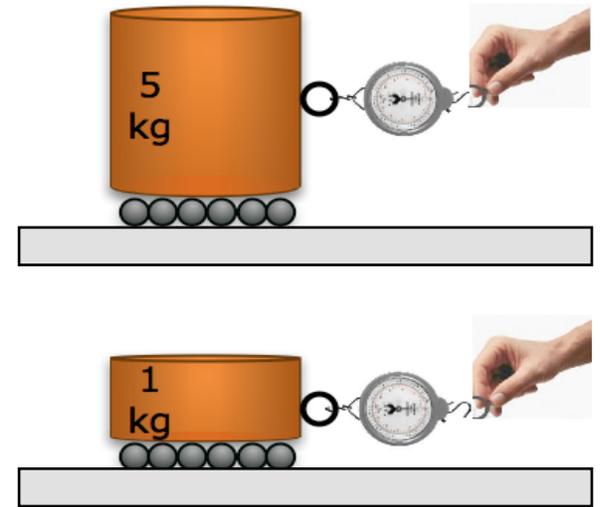
You are pulling the block
along a table
To keep the block moving at
constant speed

1. Pull with a decreasing force.
2. Pull with a constant force.
3. Pull with an increasing force.
4. Not pull at all.



You are pulling two blocks along a table with constant speed. Which one requires a larger force?

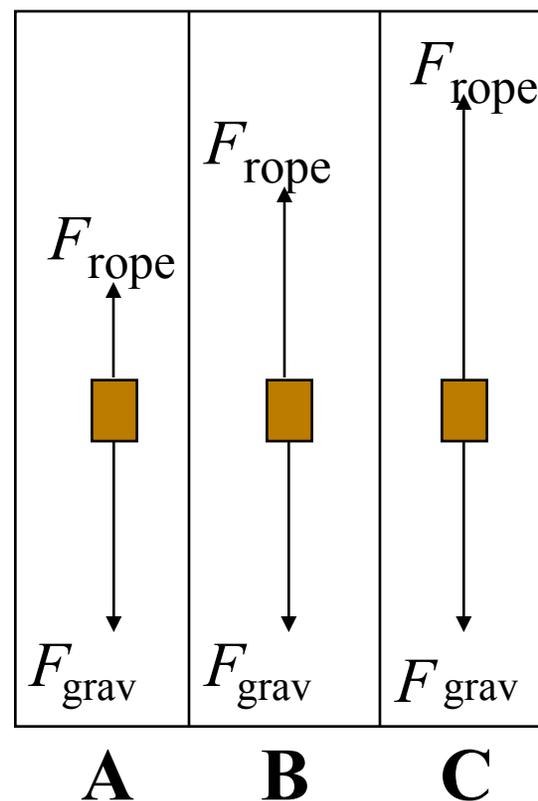
1. The 1 kg weight block
2. The 5 kg weight block
3. They require the same force.
4. There is not enough information to tell.

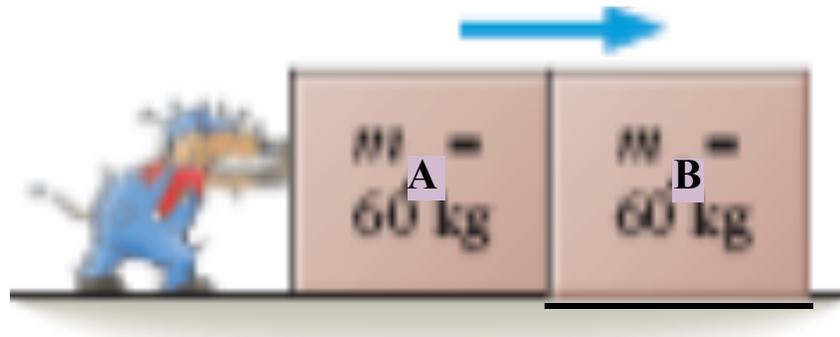




Suppose a block is being raised by a rope **at constant speed.**

Which is the correct free-body diagram of the block?





7. The mover is pushing two crates along a frictionless horizontal surface. Consider the following four forces:

\vec{F}_1 -- the force that the mover exerts on crate A

\vec{F}_2 -- the force that crate B exerts on crate A

\vec{F}_3 -- the force that crate A exerts on crate B

\vec{F}_4 -- the force that crate A exerts on the mover

Which of the following correctly compares the magnitudes of these forces?

A. $F_1 = F_2 = F_3 = F_4$

C. $F_1 = F_4 > F_2 = F_3$

B. $F_1 = F_2 = F_3 > F_4$

D. $F_1 > F_3 > F_2 > F_4$



6. In each of the situations below, a mover pushes two crates along a horizontal surface, and the crates move together with a constant acceleration. the forces that the two blocks exert on each other are equal in magnitude in _____ .

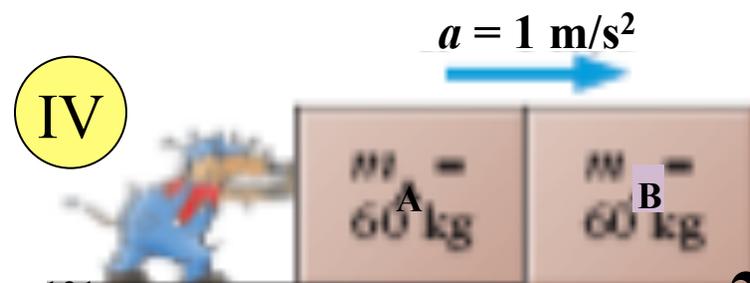
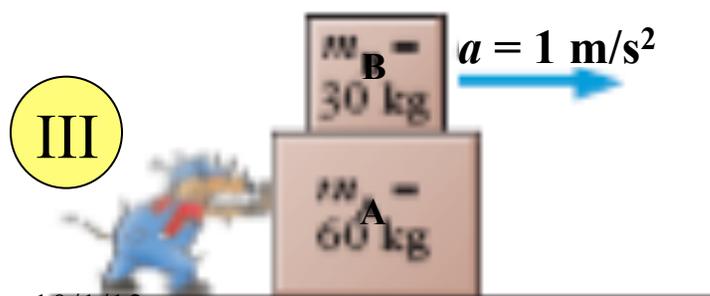
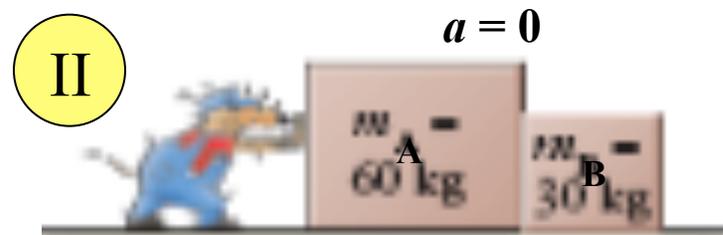
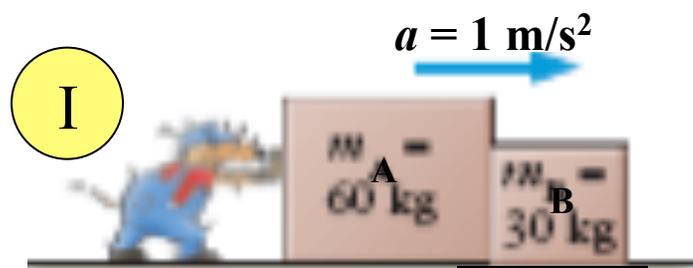
A. situation II

D. two of these situations

B. situation III

E. All four of these situations

C. situation IV





In each of the situations below, a mover pushes two crates along a horizontal surface, and the crates move together with a constant acceleration. Which of these situations are possible only if one or more frictional forces are involved?

- A. Situation II
- B. Situation III
- C. Situations II and III

- D. Situations II, III, and IV
- E. None -- all can happen frictionlessly.

