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 _____ .

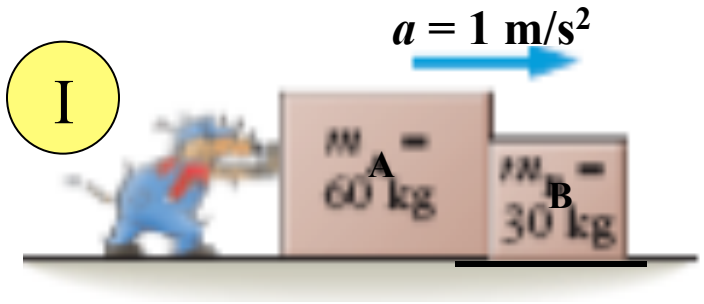
A. situation II

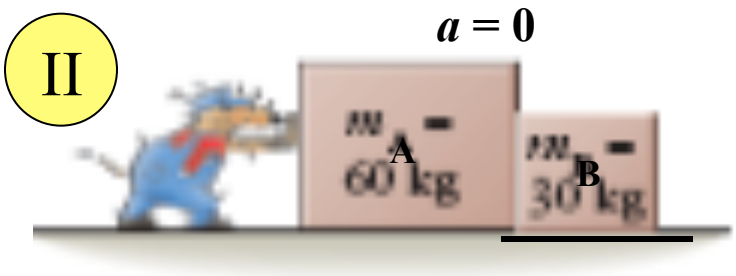
B. situation III

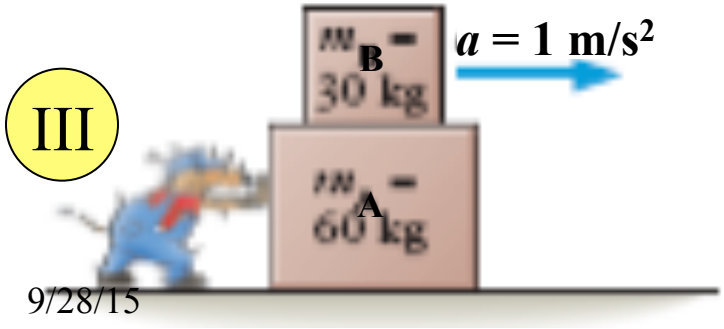
C. situation IV

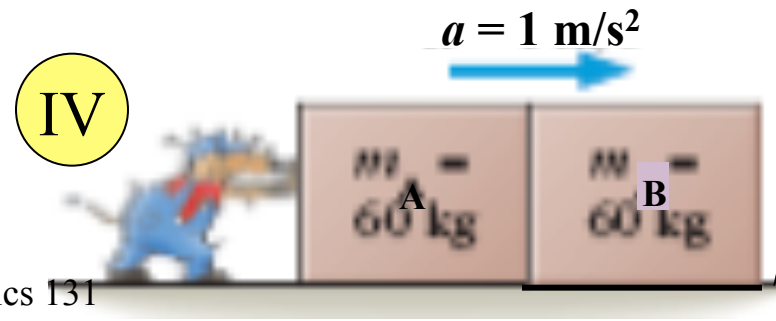
D. two of these situations

E. All four of these situations









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 situation are possible only if one or more frictional forces are involved?

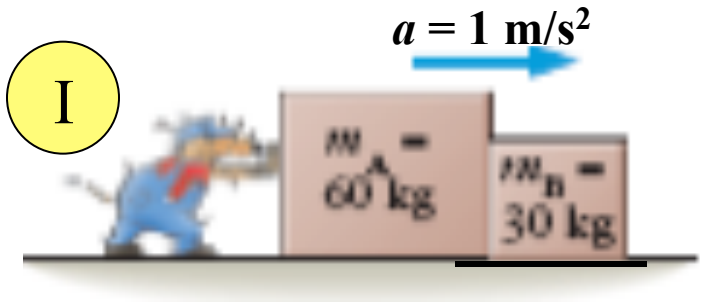
A. Situation II

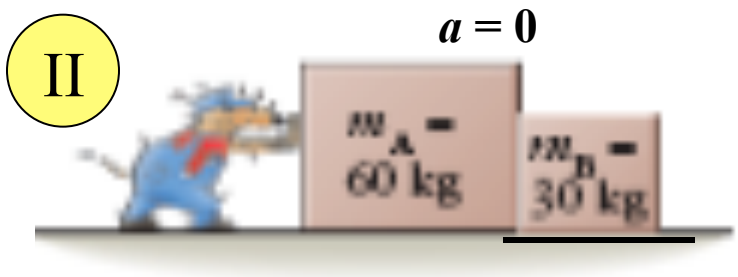
B. Situation III

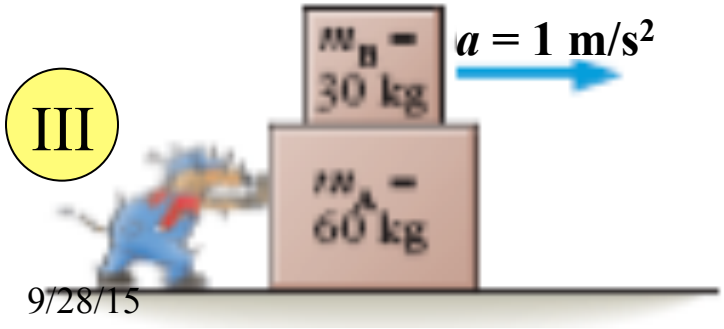
C. Situations II and III

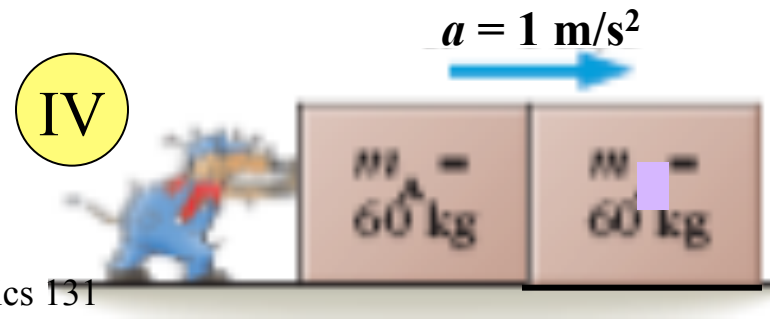
D. Situations II, III, and IV

E. None -- all can happen frictionlessly.









A ball rolls off a table at a pretty good speed a[illegible] has not yet his the ground. What forces act on the ball after it has left the table but not yet hit the ground? Click all that apply.

1. A normal force, N
2. A tension force, T
3. A friction force, f
4. A weight, W
5. No forces

Ignore air resistance

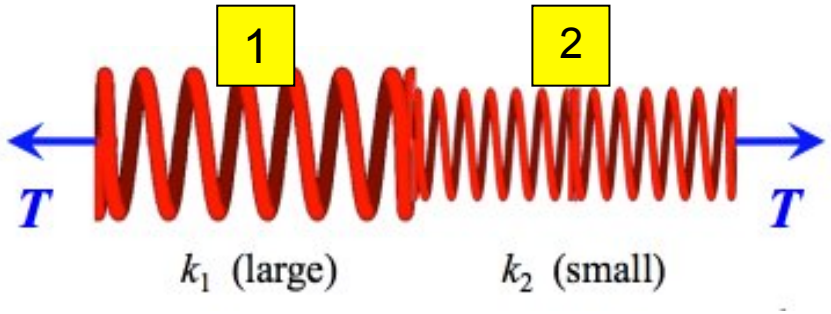
What reasoning did you use to make you decision?

A block is sitting on a table and is being pulled by a string. What forces act on the block while it is moving at a constant velocity?

1. A normal force, N
2. A tension force, T
3. A friction force, f
4. A weight, W
5. No forces

What reasoning did you use to make you decision?

Two springs, are linked together and pulled from opposite ends by equal tension forces T. The springs have the same rest length, but their spring constants are NOT the same: $k_1 >> k_2$. The system is at rest. How does the amount that the springs stretch compare?



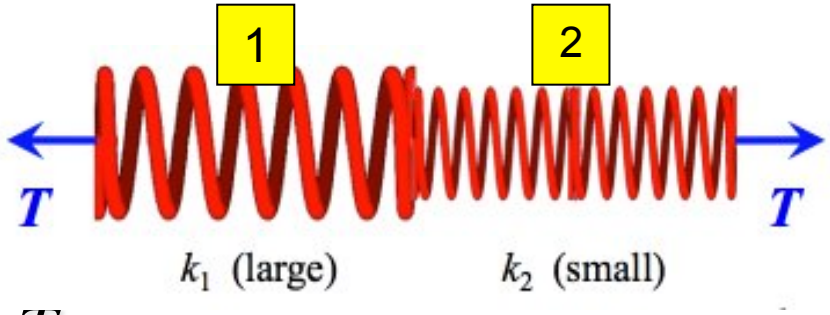
A. They stretch the same amount.

B. Spring 1 stretches more than spring 2.

C. Spring 2 stretches more than spring 1.

D. You are not given enough information to decide.

Two springs, are linked together and pulled from opposite ends by equal tension forces T. The spring constants are NOT the same: $k_1 >> k_2$. The system is at rest. How do the forces that the springs exert on each other compare?



A. They are equal but not equal to T.
B. They are equal and equal to T.
C. Spring 1 exerts a larger force on spring 2, than 2 does on 1.
D. Spring 2 exerts a larger force on spring 1, than 1 does on 2.
E. Something else.

In the figure is shown the force needed to stretch an uncoiled DNA molecule.
Suppose we measure the spring constant of DNA at three points: When it was 5%, 75%, and 125% longer than its unstretched length;
Which measurement would yield the largest spring constant?

A. 5%
B. 75%
C. 125%
D. They would all be the same