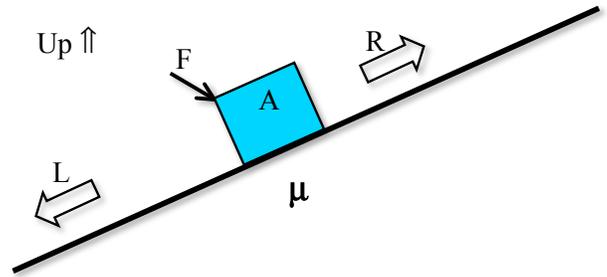


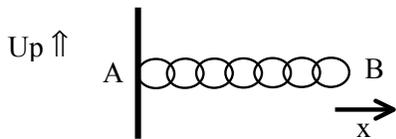
You know that there is friction between the block and the table. Assume that the block **moves down the incline**. Which of the following is true (only one is correct)?

- 1) The force of friction is zero
- 2) The force of friction obviously points in direction L.
- 3) The force of friction obviously points in direction R.
- 4) This situation is physically impossible.
- 5) I can't tell what is going on without a detailed calculation.



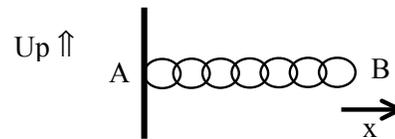
You know that there is friction between the block and the table. Assume that the block **does not move** at all. Which of the following is true (only one is correct)?

- 1) The force of friction is zero
- 2) The force of friction obviously points in direction L.
- 3) The force of friction obviously points in direction R.
- 4) This situation is physically impossible.
- 5) I can't tell what is going on without a detailed calculation.



A horizontal spring with constant k is stretched a distance x . The magnitude of the force(s) exerted by the spring is (are) given by:

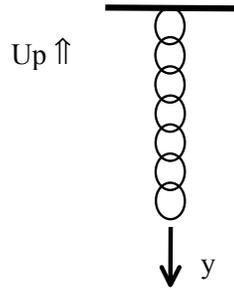
- 1) kx at point B and zero at point A
- 2) kx at point A and zero at point B
- 3) $kx/2$ at both point A and B
- 4) kx at both point A and B
- 5) None of the above



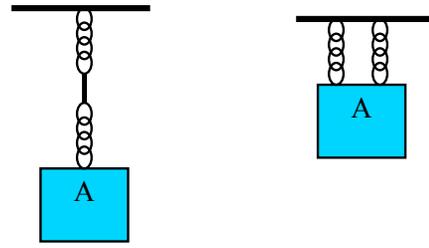
A horizontal spring with constant k is stretched a distance x . I claim that the magnitude of the forces exerted by the spring at its two ends are equal to each other.

- 1) This must be true by Newton's 3rd law (action/reaction)
- 2) This must be true if the spring is not accelerating
- 3) This is approximately true but only if I can ignore the spring's mass
- 4) None of the above

A vertical spring with constant k is stretched a distance y . I claim that the magnitude of the forces exerted by the spring at its two ends are equal to each other.



- 1) This must be true by Newton's 3rd law (action/reaction)
- 2) This must be true if the spring is not accelerating
- 3) This is approximately true but only if I can ignore the spring's mass
- 4) None of the above



Two identical blocks are held up by two identical springs either in series (left) or in parallel (right) Which is true?

- 1) In both cases, each spring holds up half of the mass and exerts a force of $Mg/2$.
- 2) In both cases, each spring exerts a force of Mg .
- 3) In series, each spring exerts a force of $Mg/2$. In parallel, each spring exerts a force of Mg .
- 4) In series, each spring exerts a force of Mg . In parallel, each spring exerts a force of $Mg/2$.
- 5) This situation is physically impossible.
- 6) I can't tell what is going on.