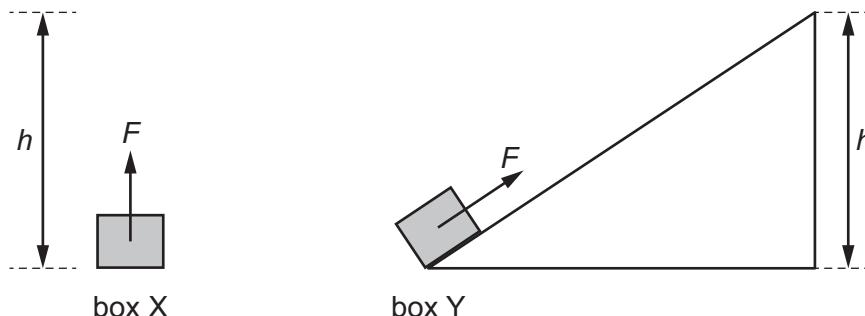


- 18** Two boxes X and Y have the same mass. Box X is lifted vertically through a height h by a force of magnitude F .

Box Y is pulled along a slope by a force of the same magnitude to reach the same height, as shown.



Which statement is correct?

- A** Both boxes gain the same amount of gravitational potential energy and the same amount of work is done by the two forces.
- B** Both boxes gain the same amount of gravitational potential energy but more work is done by the force acting on box Y than by the force acting on box X.
- C** Box Y gains less gravitational potential energy than box X because the weight of box Y is less than the weight of box X.
- D** Box Y gains more gravitational potential energy than box X as more work is done by the force acting on box Y than by the force acting on box X.