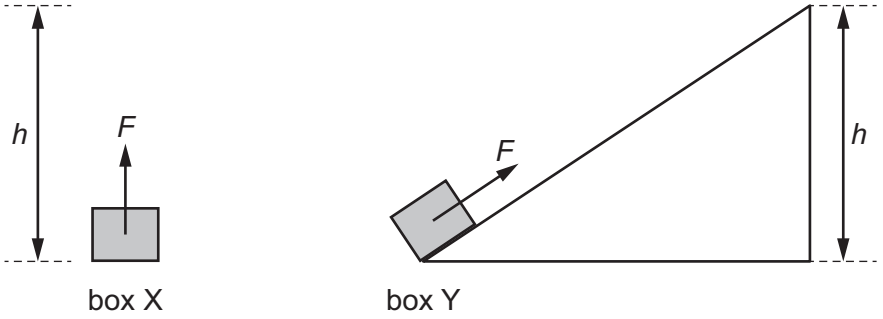
18 Two boxes X and Y have the same mass. Box X is lifted vertically through a height *h* by a force of magnitude *F*.

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.

19 The force-extension graph of a metal wire is shown.

At which point on the graph does the metal wire stop obeying Hooke's law?