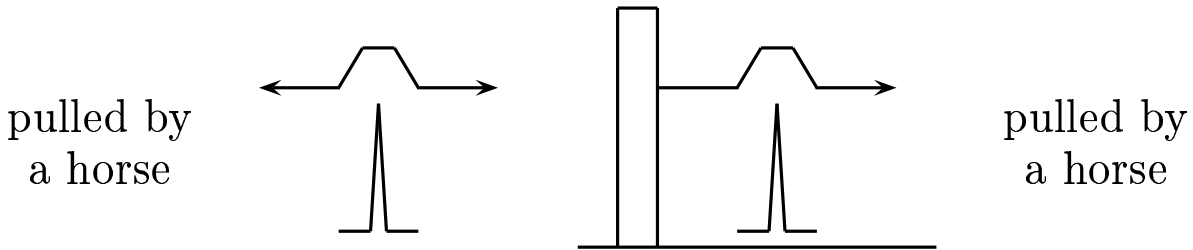


Two horses trying to pull apart a pair of pants. Suppose Levi had only one horse and attached the other side of the pants to a post.



Using only one horse would

- A) Cut the tension on the pants by one-half.
- B) Not change in the tension on the pants at all.
- C) Double the tension on the pants.

Explanation: From the conservation of energy relation:

$$M g h = \frac{1}{2} k b^2, \quad \text{and}$$

$$F_{sp} = k b = \sqrt{2 k m g h}.$$

Since for both cases, the force pulled by one horse is the same, the tension along the string is the same. So the tension on the pants is the same.

Answer **B**.