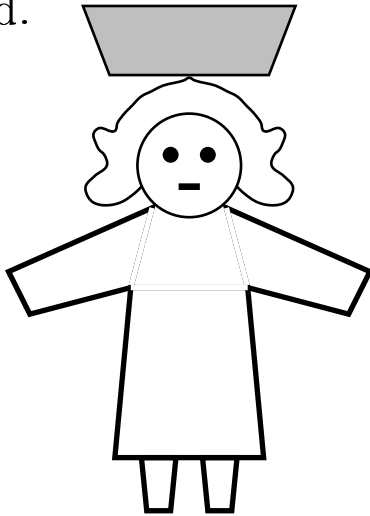


Preparing his case for trial, a lawyer pondered this question. A 1 lb flower pot fell one foot from a shelf and struck his client squarely on the head.



$$g = 32 \text{ ft/s}^2$$

How much force did the pot exert on his client?

- A)  $F = 1 \text{ lb}$  B)  $F = 4 \text{ lb.}$   
C)  $F = 16 \text{ lb}$  D)  $F = 32 \text{ lb.}$   
E) More information is needed.
- 

*Explanation:* From the conservation of energy relation:

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

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

Applied to the court case, the force  $F$  among other things depends on the spring constant; *i.e.*, how “stiff” was the skull, neck, pot and hat, *etc.*.  
Answer **E**.