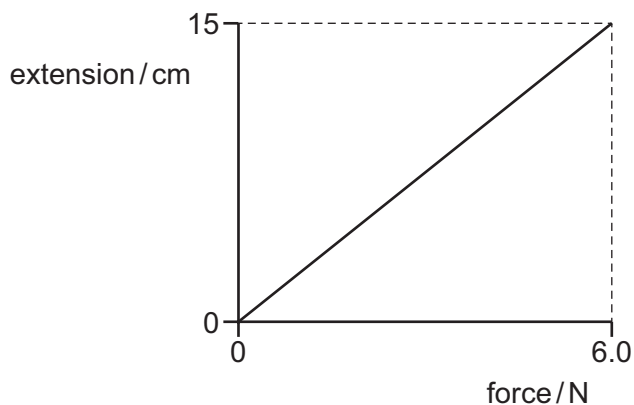


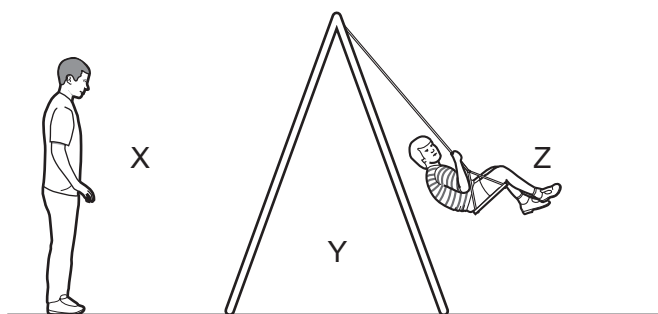
**20** An extension–force graph for a spring is shown.



What is the spring constant of the spring?

- A**  $0.025 \text{ N m}^{-1}$     **B**  $0.40 \text{ N m}^{-1}$     **C**  $2.5 \text{ N m}^{-1}$     **D**  $40 \text{ N m}^{-1}$

**21** A man stands stationary in front of a swing. A child sits and swings.



The child blows a whistle that emits a sound at a constant frequency.

The man observes the frequency of the sound when the swing is at positions X, Y and Z.

When will the man hear the highest frequency?

- A** when the swing is at X  
**B** when the swing is at Y and moving away from the man  
**C** when the swing is at Y and moving towards the man  
**D** when the swing is at Z