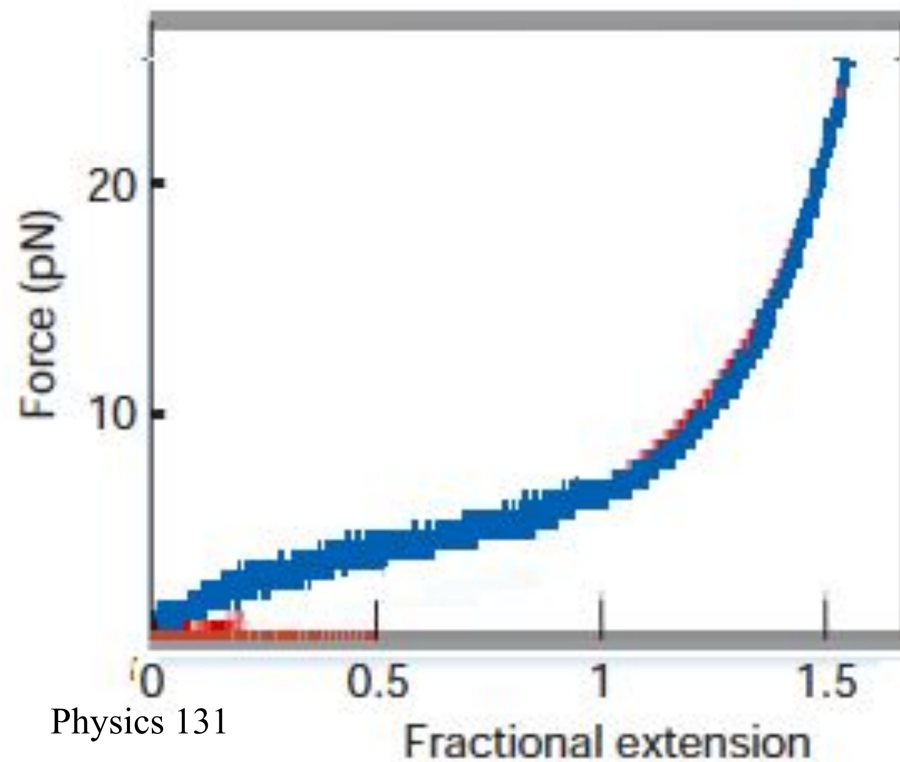
In the figure is shown the force needed to stretch an uncoiled DNA molecule.
Suppose we measure the spring constant of DNA at three points: When it was 5%, 75%, and 125% longer than its unstretched length;
Which measurement would yield the largest spring constant?

A. 5%
B. 75%
C. 125%
D. They would all be the same



A paramecium swimming through a fluid is moving at approximately a **constant velocity** as a result of wiggling its cilia. What can you say about the **net force** that is being exerted on it while it is doing this?

A. It is significantly greater than zero
B. It is a little bit greater than zero
C. It is equal to zero
D. It cannot be determined from the information given.

A paramecium swimming through a fluid is moving at approximately a **constant velocity** as a result of wiggling its cilia. What can you say about the magnitude of the normal force that the paramecium's cilia exert on the water ($N_{c\rightarrow w}$) compared to the magnitude of the normal force that the water exerts back on the cilia ($N_{w\rightarrow c}$) ?

A. $N_{c\rightarrow w}$ is significantly greater than $N_{w\rightarrow c}$

B. $N_{c\rightarrow w}$ is a little bit greater than $N_{w\rightarrow c}$

C. $N_{c\rightarrow w} = N_{w\rightarrow c}$

D. $N_{c\rightarrow w}$ is significantly less than $N_{w\rightarrow c}$

E. $N_{c\rightarrow w}$ is a little bit less than $N_{w\rightarrow c}$

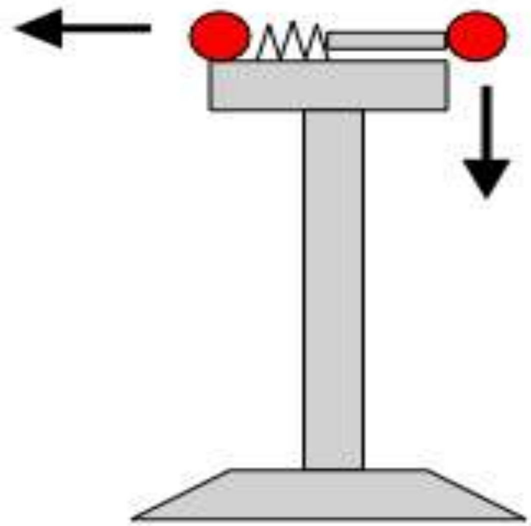
F. It cannot be determined from the information given.

A paramecium swimming through a fluid is moving at approximately a **constant velocity** as a result of wiggling its cilia. What can you say about the magnitude of the normal force that the paramecium's cilia exert on the water ($N_{c\rightarrow w}$) compared to the magnitude of the viscous force that the water exerts on the paramecium ($F_{w\rightarrow p}$) ?

A. $N_{c\rightarrow w}$ is significantly greater than $F_{w\rightarrow p}$
B. $N_{c\rightarrow w}$ is a little bit greater than $F_{w\rightarrow p}$
C. $N_{c\rightarrow w} = F_{w\rightarrow p}$
D. $N_{c\rightarrow w}$ is significantly less than $F_{w\rightarrow p}$
E. $N_{c\rightarrow w}$ is a little bit less than $F_{w\rightarrow p}$
F. It cannot be determined from the information given.

Which ball will hit first?

1. The shot one
2. The dropped one
3. They' ll hit
   at the same time
4. You can' t tell
   from the information
   given.



Two dense objects (so air drag can be ignored) are shot straight up at the same time from the same height.

Object A is shot with a speed of 1 m/s, object B with a speed of 2 m/s. Which takes longer to come back to its starting point?

1. Object A
2. Object B
3. Both take the same.
4. I can't tell since you didn't give me the masses.
5. I can't tell for some other reason.

Two dense objects (so air drag can be ignored) are shot up at the different angles at same time from the same height. They follow the trajectories shown. Which will hit its target first??

1. Object A
2. Object B
3. Both the same.
4. I can't tell since you didn't give the masses
5. I can't tell for some other reason.