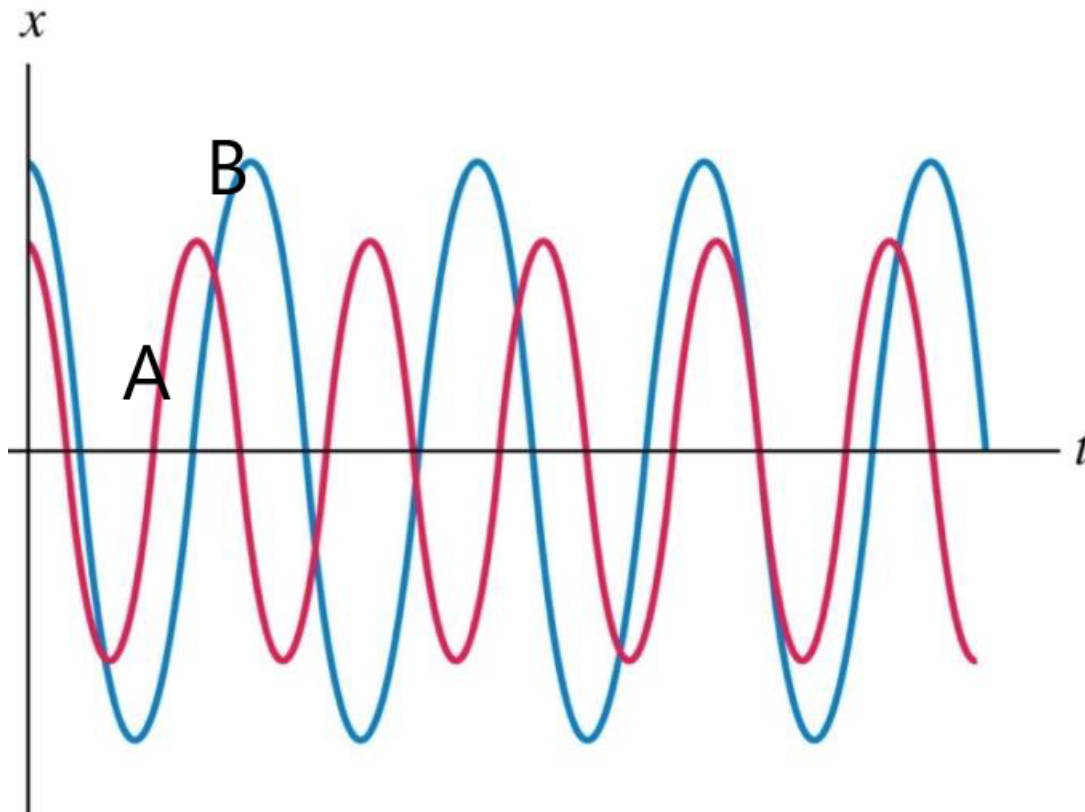


# Daily Check 37

1. Consider two identical blocks oscillating on different horizontal springs. Which has the larger spring constant?

/2



- A  
 B  
 same

2. An object at the end of a spring is oscillating in simple harmonic motion given by

/2

$$x(t) = (4.0\text{cm})\cos((3.0\text{rad/s})t + 0.3\text{rad})$$

. What is the maximum magnitude of the acceleration of this mass?

$12 \frac{\text{cm}}{\text{s}^2}$

$4 \frac{\text{cm}}{\text{s}^2}$

$4/3 \frac{\text{cm}}{\text{s}^2}$

$36 \frac{\text{cm}}{\text{s}^2}$

3. An object will always undergo simple harmonic motion if the **restoring force** is proportional to ..

/2

$\sin(x)$

$\cos(x)$

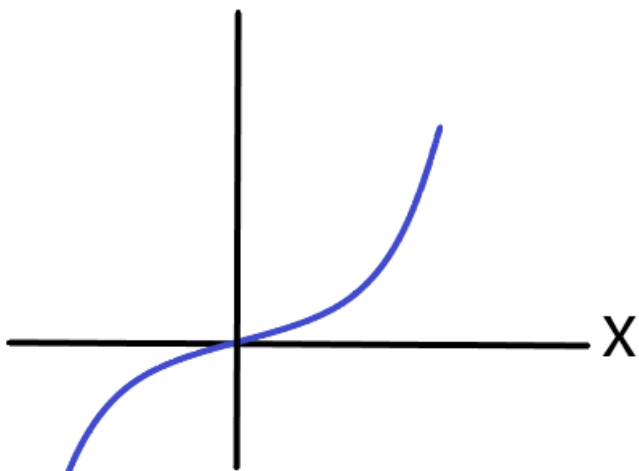
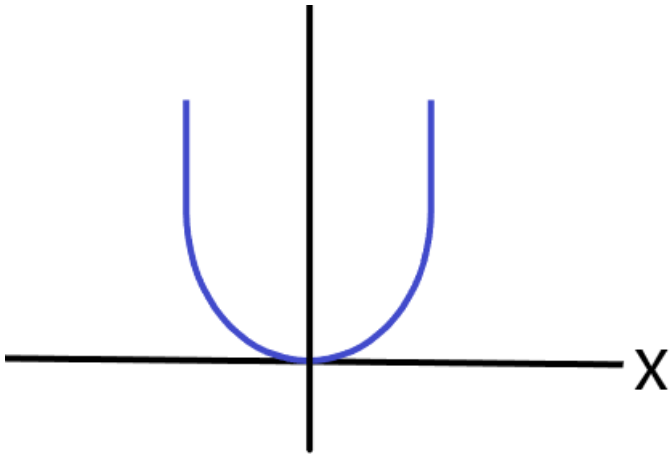
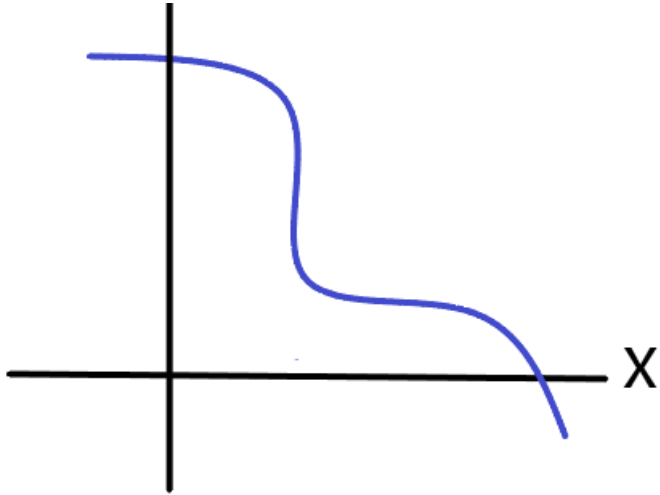
$x$

$x^2$

Both A and B would work

4. A force  $f(x)$  acts on an object and the object undergoes simple harmonic motion. Which of the following could be the potential energy diagram for this force?

/2



5. An object on the end of a spring is oscillating in simple harmonic motion given by

/2

$x(t) = (4.0 \text{ cm})\cos((3.0 \text{ rad/s}) t + 0.3 \text{ rad})$ . What is the maximum speed of this mass, and where in the motion does this occur?

- 12 cm/s, happens when it is at its maximum location
- 4 cm/s, happens when it is at its maximum location
- $(4/3)$  cm/s, happens when it is at its maximum location
- 12 cm/s, happens when it is passing through equilibrium
- 4 cm/s, happens when it is passing through equilibrium