The magnitude (N) of the resultant of the three co-planar forces, A, B, and C, is most nearly:

- A. 9.0
- B. 7.3
- C. 8.9
- D. 10.5
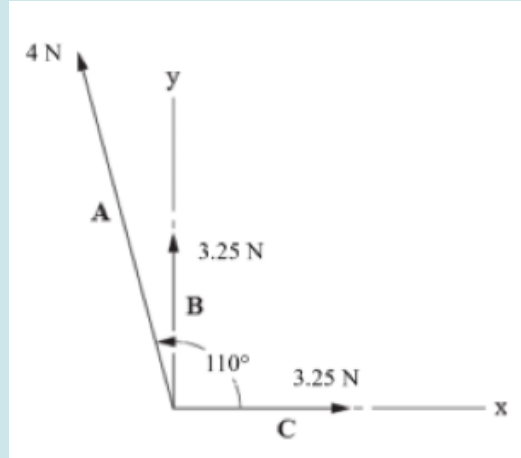
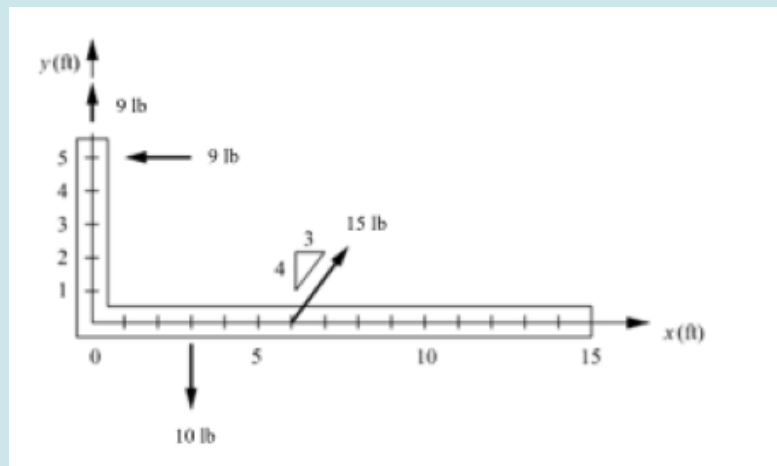Select the location on the x-axis where an additional load must be placed in order to achieve equilibrium of the L-shaped bar

- A. 11
- B. 9
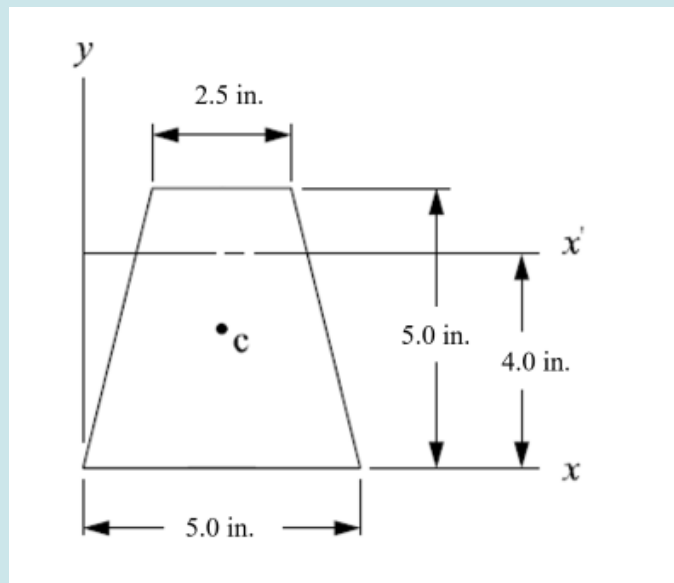- C. 12
- D. 8

The moment of inertia (in^4) of the area about the x' axis ($I_{x'}$) is most nearly:

- A.   96.9
- B.   37.6
- C.   337.6
- D.   130.2

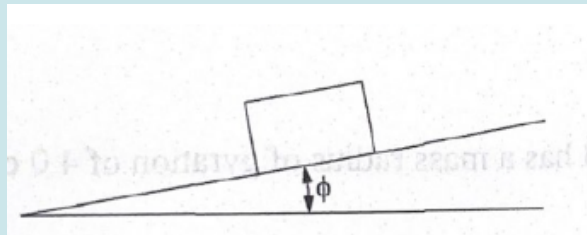In the figure below, the coefficient of static friction between the block and the inclined plane is 0.5. The block is in equilibrium.

As the inclined plane is raised, the block will begin to slide when:

- A.   sin Φ = 0.5
- B.   sin Φ = 2.0
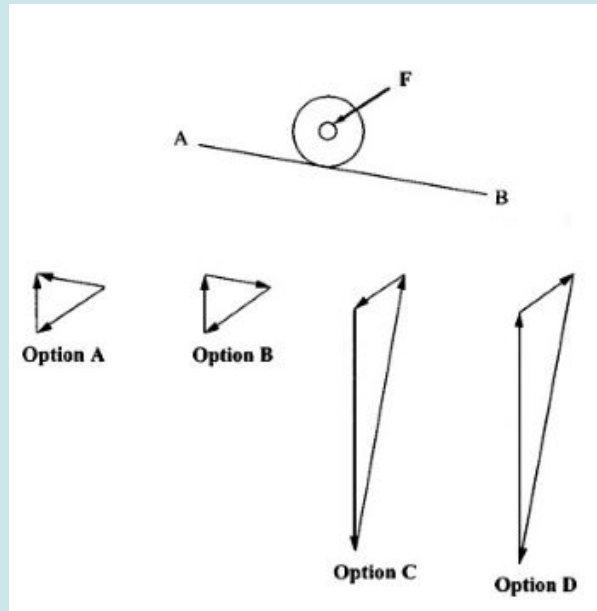- C.   cos Φ = 0.5
- D.   tan Φ = 0.5

Question **5**

Not yet
answered

Marked out of
1.00

v2 (latest)

A heavy roller is held in equilibrium on a friction-less Plane AB by the force **F**, as shown.

Option A   Option B   Option C   Option D

Which diagram correctly shows a vector polygon of the forces acting on the roller?

- A. Option B
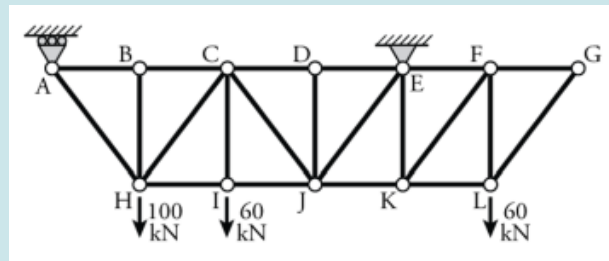- B. Option A
- C. Option D
- D. Option C

Question **6**

Not yet
answered

Marked out of
1.00

v3 (latest)

The figure below shows a simple truss. Which members in the truss have no (zero) force in them?

- A. DJ
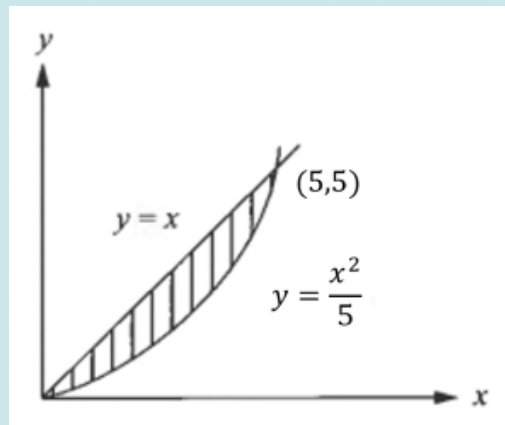- B. BH, DJ, FG, FL, GL
- C. BH, DJ, FG, GL
- D. BH, DJ

Question **7**

Not yet
answered

Marked out of
1.00

v3 (latest)

Consider the following graph:

A.

$$\frac{\int_0^5 \left(x - \frac{x^2}{5}\right)dx}{\int_0^5 \left(x^2 - \frac{x^3}{5}\right)dx}$$

B.

$$\frac{\int_0^5 \left(x^2 - \frac{x^3}{5}\right)dx}{\int_0^5 \left(x - \frac{x^2}{5}\right)dx}$$

C.

$$\frac{\int_0^5 \frac{x^3}{5}dx}{\int_0^5 \left(x + \frac{x^2}{5}\right)dx}$$

D.

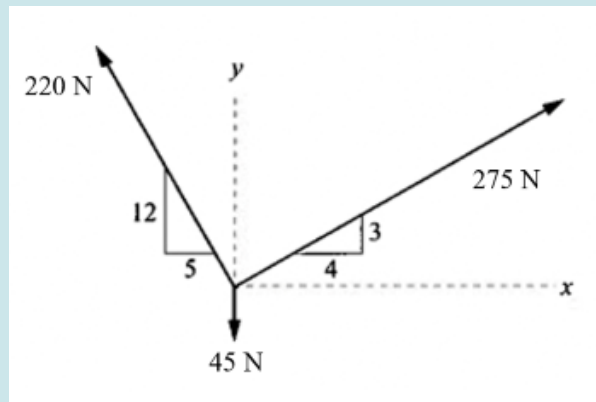$$\frac{\int_0^5 \left(\frac{x^2}{2} + \frac{x^3}{5}\right)dx}{\int_0^5 \left(x - \frac{x^2}{5}\right)dx}$$

Three forces act as shown below.

The magnitude of the resultant of the three forces (N) is most nearly:

○ A. 355

○ B. 350

○ C. 135

○ D. 323