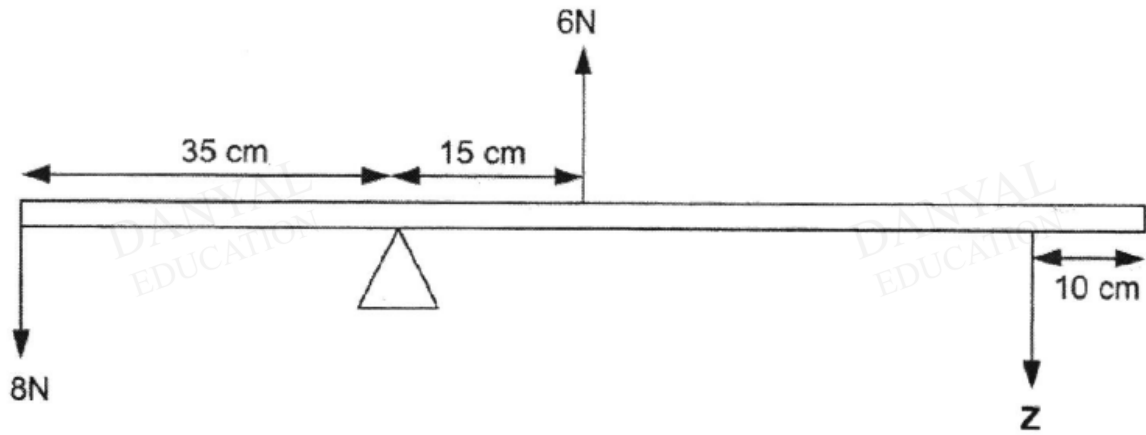


O Level Pure Physics MCQs

Moments Test 2.0

Q1

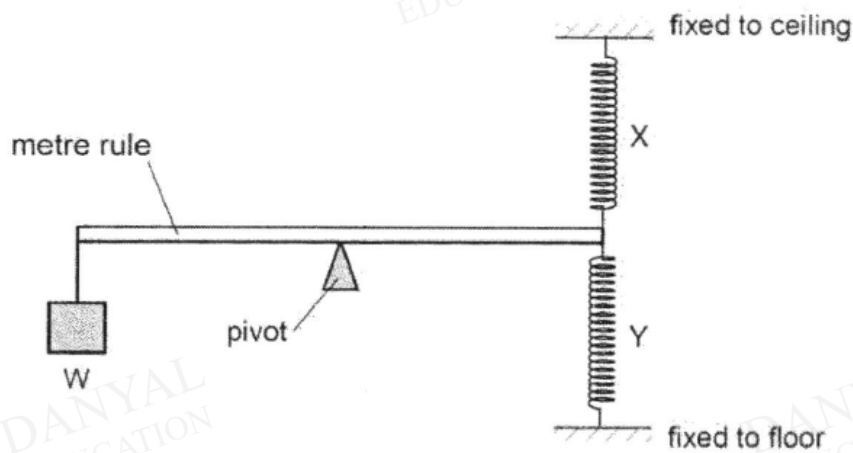
In order to keep the one metre long beam balanced, what should the value of Z be?



- A 4.75 N B 6.73 N C 19.0 N D 37.0 N

Q2

The diagram shows two stretched springs X and Y being attached to one end of a metre rule. A weight W is hung from the other end.



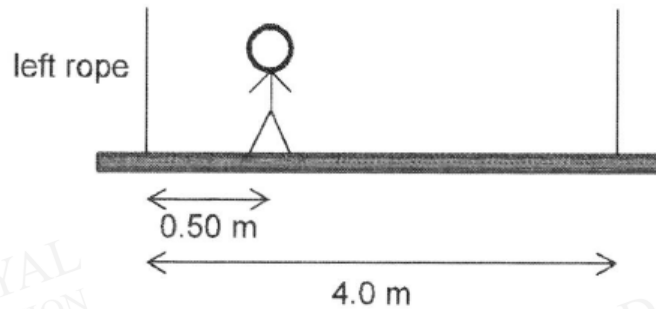
The weight W is now moved gradually towards the pivot.

How does the extension of each spring change?

| | X | Y |
|---|-----------|-----------|
| A | decreases | decreases |
| B | decreases | increases |
| C | increases | decreases |
| D | increases | increases |

Q3

A cleaner cleans the windows of a building by standing on a uniform platform. The platform is supported by two ropes as shown in the diagram below. The ropes are of equal distance from each ends of the platform. The cleaner who has a weight of 800 N, is 0.50 m from the left rope.

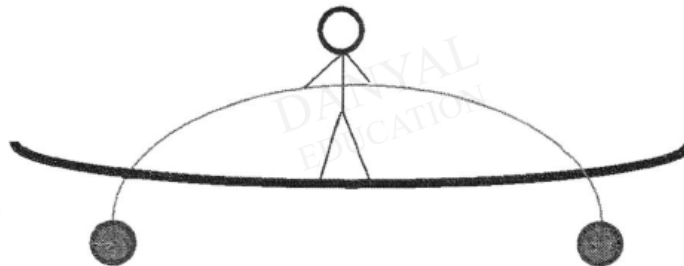


What is the tension in the left rope? Assume that the platform has negligible mass.

- A 100 N B 700 N C 914 N D 6400 N

Q4

An amateur tightrope walker balances himself by holding a hold pole. Heavy spheres are attached to the ends of the pole.



Which statement explains why the man is able to balance himself on the rope?

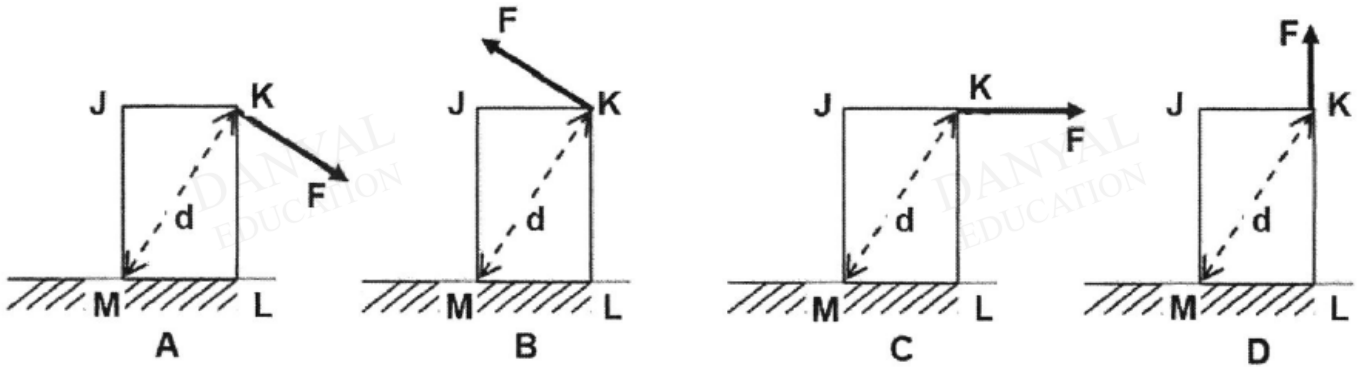
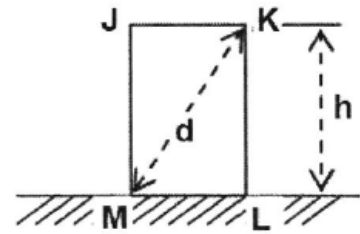
The overall centre of gravity of the man and his balancing pole is directly

- A below the pivot and therefore the weight will provide a restoring moment.
B on the pivot and therefore the weight will provide a restoring moment.
C above the pivot and therefore the weight will provide a restoring moment.
D above the pivot and therefore the line of action of force will provide a restoring moment.

Q5

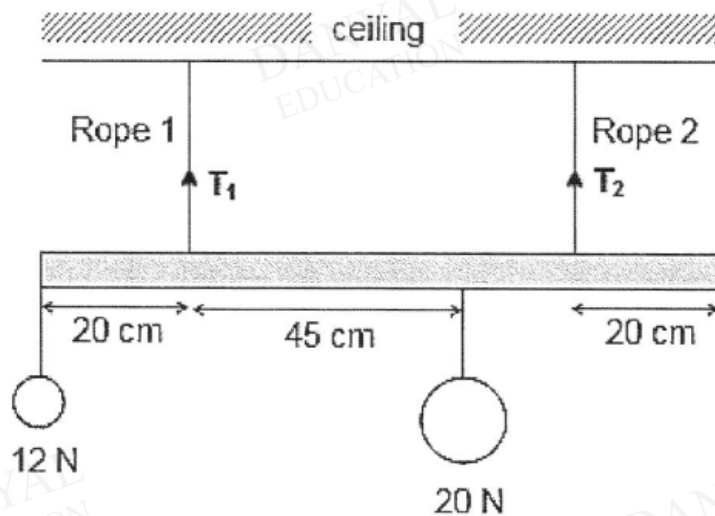
A uniform rectangular block JKLM of height h and diagonal d rests on the ground as shown on the right.

Which diagram below shows the easiest way for a force F to topple the block?



Q6

12. The figure below shows a metre rule hanging from the ceiling using two ropes. Two weights, 12 N and 20 N, are attached to the metre rule.

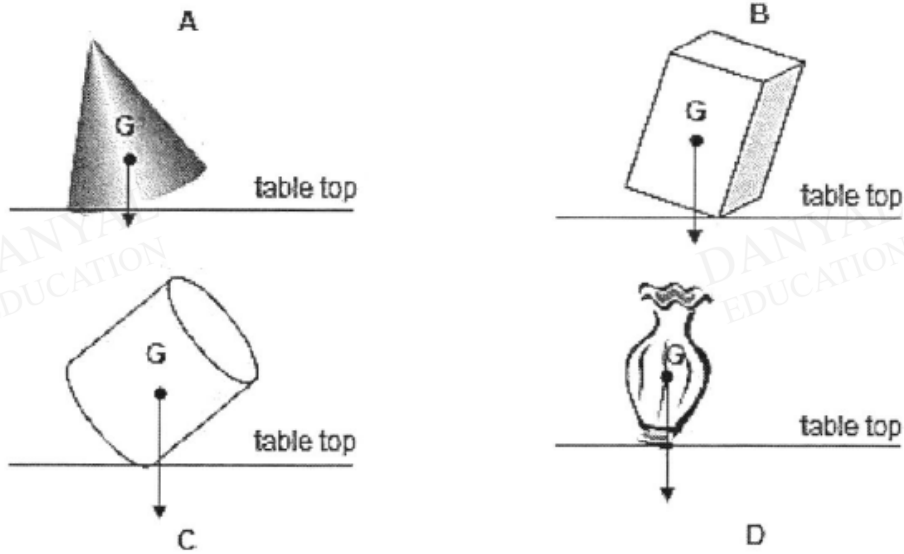


What is the tension T_2 ?

- A 11 N
- B 12 N
- C 21 N
- D 32 N

Q7

13. The diagrams below show the positions of different objects when tilted. **G** is the centre of gravity of the objects. Which one of the following objects will topple when released from their respective positions?



Q8

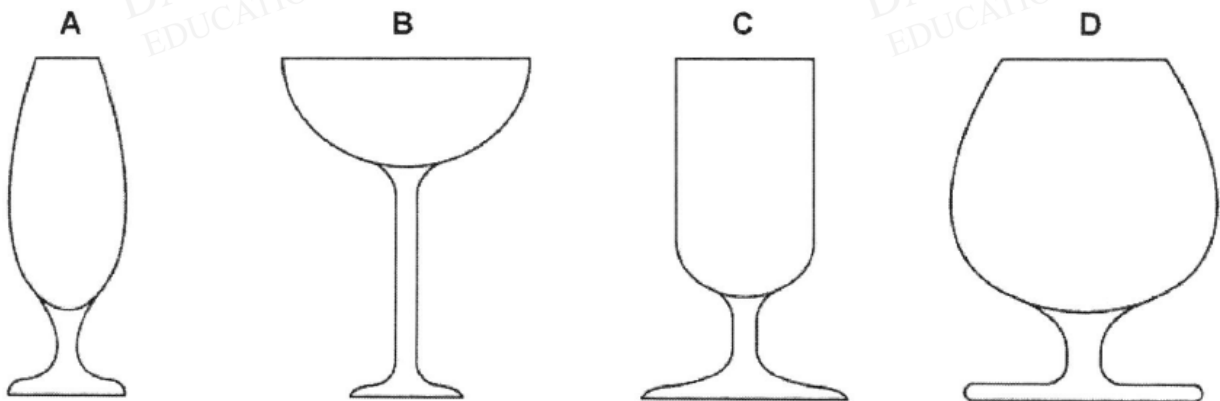
What affects the stability of an object?

- A only its base area and the location of its centre of mass
- B only its weight and its base area
- C only the location of its centre of mass
- D only its weight

Q9

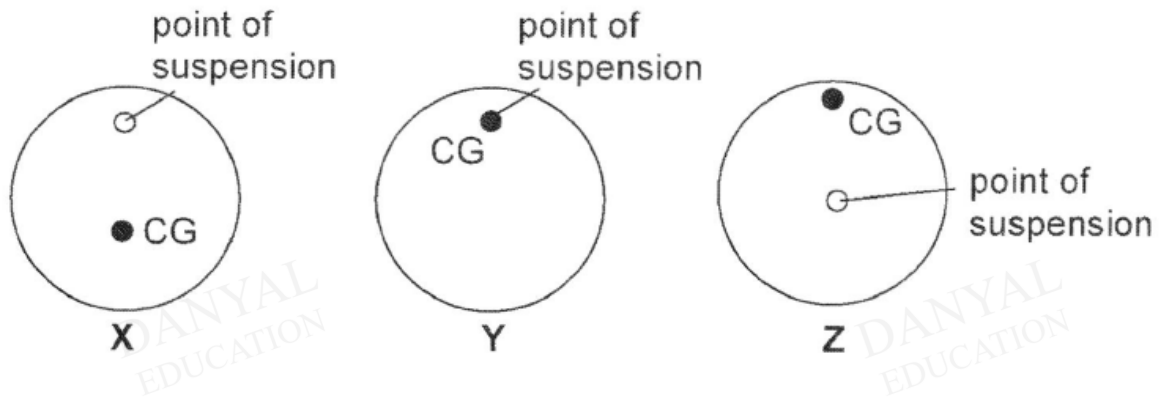
The diagrams show the cross-sections of different glasses.

Which one is the least stable when filled with liquid?



Q10

Three circular objects are suspended from three different positions as shown below. (CG: centre of gravity)



Which of the following matches the figure with their types of equilibrium?

| | X | Y | Z |
|---|----------|----------|----------|
| A | neutral | unstable | stable |
| B | stable | unstable | neutral |
| C | stable | neutral | unstable |
| D | unstable | neutral | stable |

Answers

Moments Test 2.0

Q1 B

Q2 C

Q3 B

Q4 A

Q5 B

Q6 A

Q7 C

Q8 A

Q9 B

Q10 C

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION