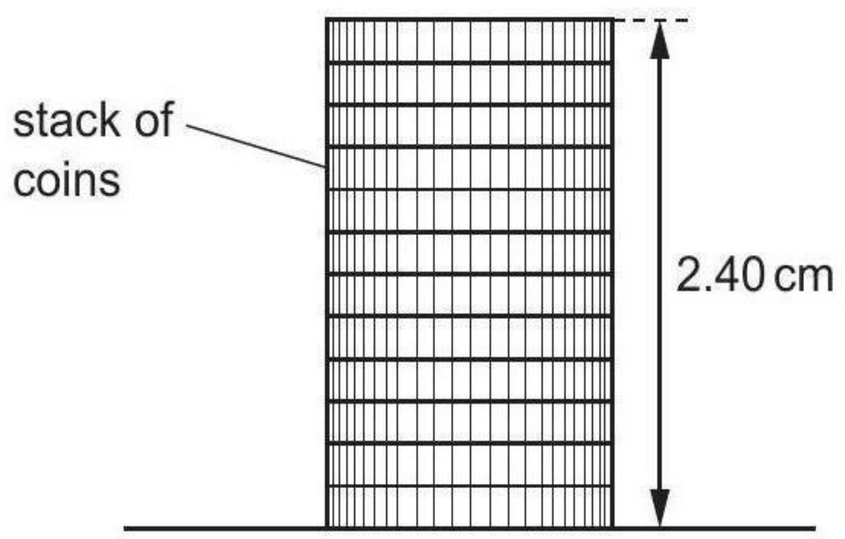
1)

1 The diagram shows the height of a stack of identical coins.

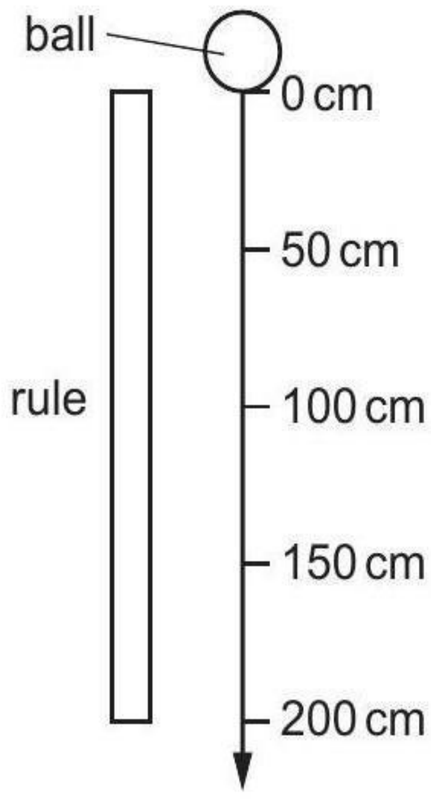


What is the thickness of one coin?

A 0.20 mm **B** 2.0 mm **C** 0.24 cm **D** 2.0 cm

2)

2 In a laboratory, a ball is dropped in a vacuum and falls 200 cm.



Which statement describes the acceleration of the ball?

A It is greater at 10 cm than at 200 cm.

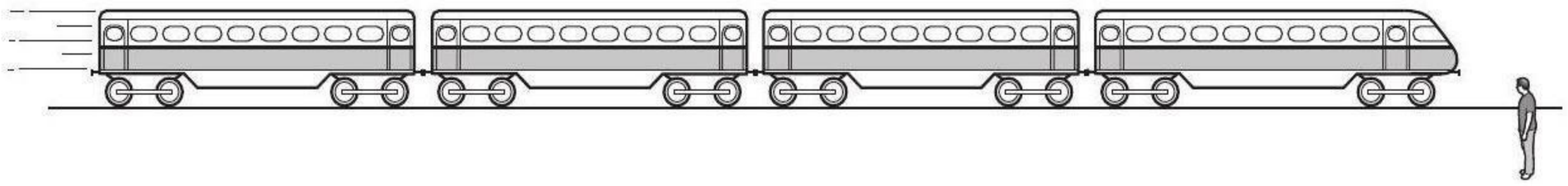
B It is greatest at 200 cm.

C It is smaller at 50 cm than at 100 cm.

D It is the same value at 50 cm as at 150 cm.

3)

3 A man stands by a railway track.



A train travelling at 40 m / s takes 2.0 s to pass the man.

What is the length of the train?

A 20 m **B** 38 m **C** 40 m **D** 80 m

4)

4 Which statement about the masses and weights of objects on the Earth is correct?

A A balance can only be used to compare weights, not masses.

B Heavy objects always have more mass than light ones.

C Large objects always have more mass than small ones.

D Mass is a force but weight is not.

5)

5 A stone has a weight of 5.7 N.

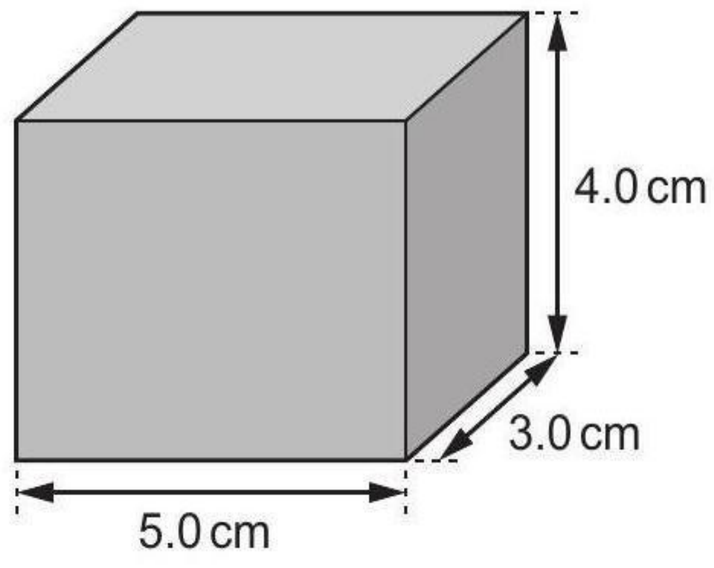
The gravitational field strength g is 10 N / kg.

What is the mass of the stone?

A 0.57 kg **B** 5.7 kg **C** 57 kg **D** 570 kg

6)

6 The block of metal shown has a mass of 240 g.



What is the density of the metal?

A 0.25 g / cm^3 **B** 4.0 g / cm^3 **C** 16 g / cm^3 **D** 14 400 g / cm^3

7)

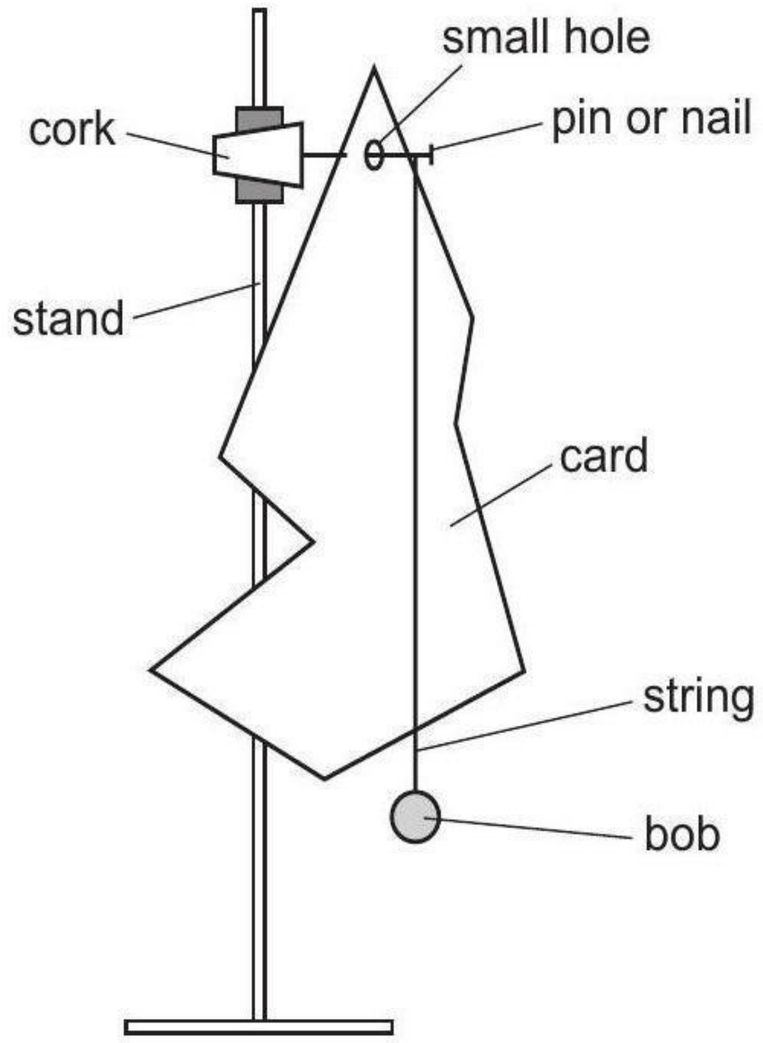
7 A car engine causes a forward force of 100 kN to act on the car. The total resistive force on the car is 20 kN.

What is the resultant force on the car?

A 5.0 kN **B** 60 kN **C** 80 kN **D** 120 kN

8)

8 A student sets up the apparatus shown in the diagram to find the centre of mass of the card.



The student makes sure that the card, the string and the bob are all at rest.

What should the student do next?

A Mark a horizontal line on the card level with the middle of the string.

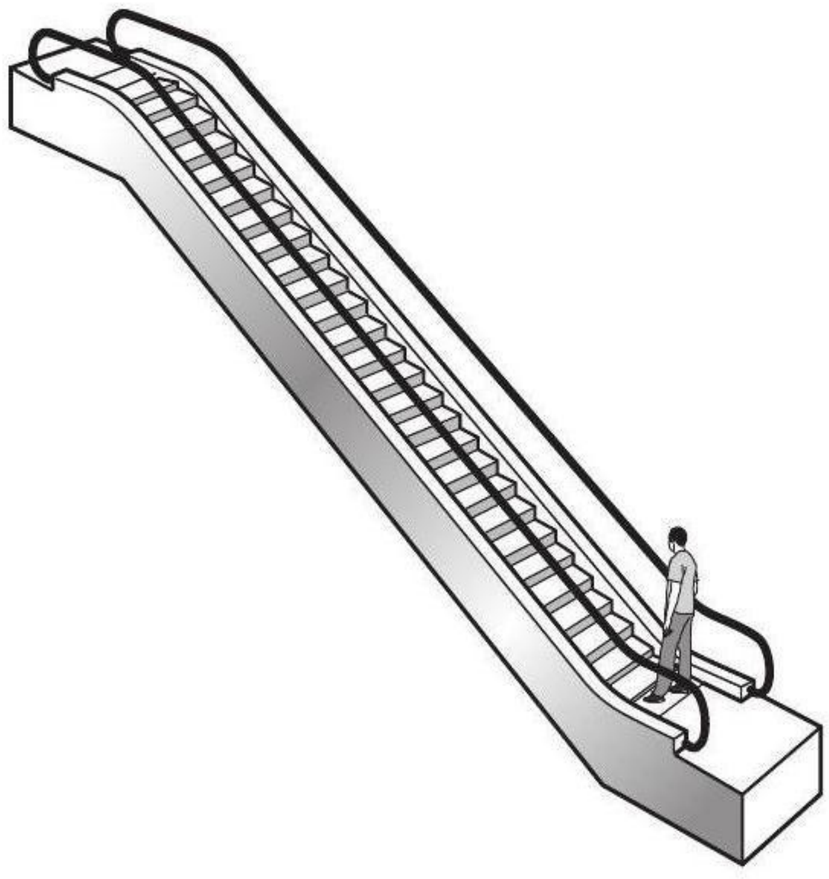
B Mark the line of the string on the card.

C Pull the bob on the string to one side and release it.

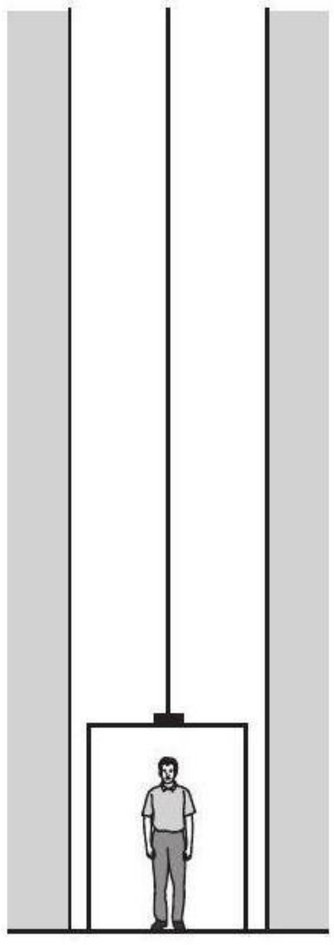
D Replace the bob with a heavier bob.

9)

9 A man can either take an escalator or a lift to travel up between two floors in a hotel.



escalator



lift

The escalator takes 20 seconds to carry the man between the two floors. The useful work done against gravity is *W*. The useful power developed is *P*.

The lift takes 30 seconds to carry the same man between the same two floors.

How much useful work against gravity is done by the lift, and how much useful power is developed by the lift?

	useful work done against gravity by lift	useful power developed by lift
A	more than *W*	less than *P*
B	more than *W*	*P*
C	*W*	less than *P*
D	*W*	*P*

10)

10 The engine of a motor vehicle develops a large amount of power.

Which statement is correct?

A The driving force acting on the vehicle must be large.

B The engine must have a very large volume.

C The engine must transfer large amounts of energy each second.

D The vehicle must be very fast.