

1.5 Hooke's Law

Question Paper

Level	IGCSE
Subject	Physics (0625)
Exam Board	Cambridge International Examinations(CIE)
Topic	General Physics
Sub Topic	1.5 Hooke's Law
Booklet	Question Paper

Time Allowed: 12 minutes

Score: /10

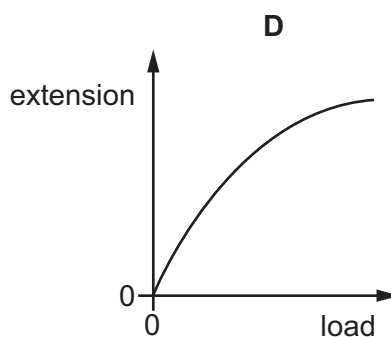
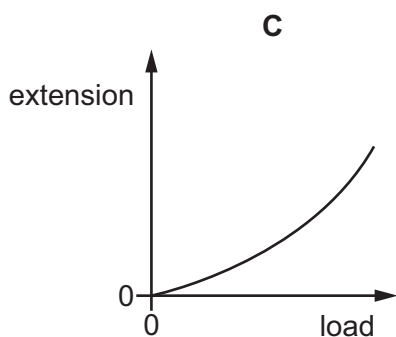
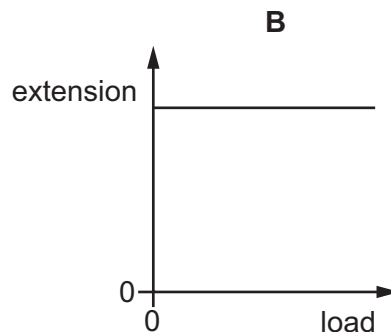
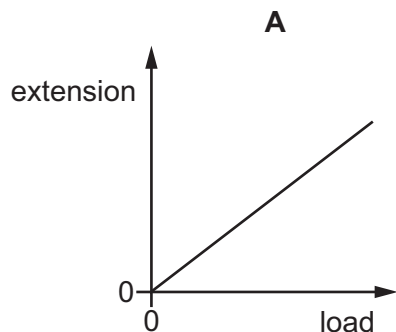
Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 A spring obeys Hooke's law.

Which graph is obtained by plotting the extension of the spring against the load applied?



- 2 An experiment is carried out to measure the extension of a rubber band for different loads.

The results are shown below.

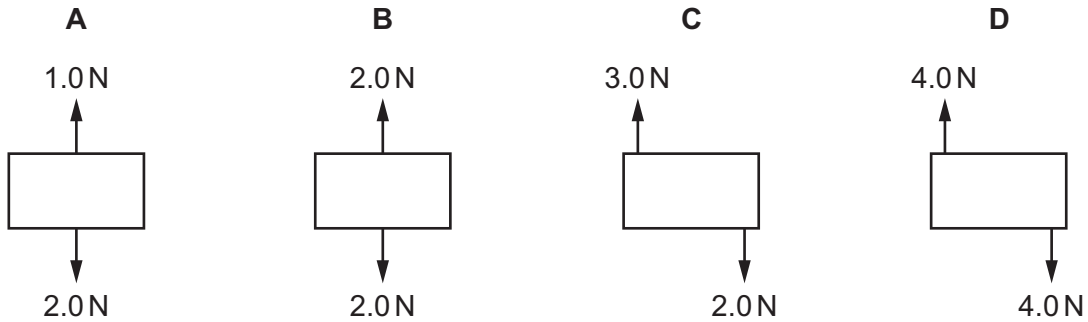
load / N	0	1.0	2.0	3.0
length / cm	15.2	16.2		18.6
extension / cm	0	1.0	2.1	3.4

Which figure is missing from the table?

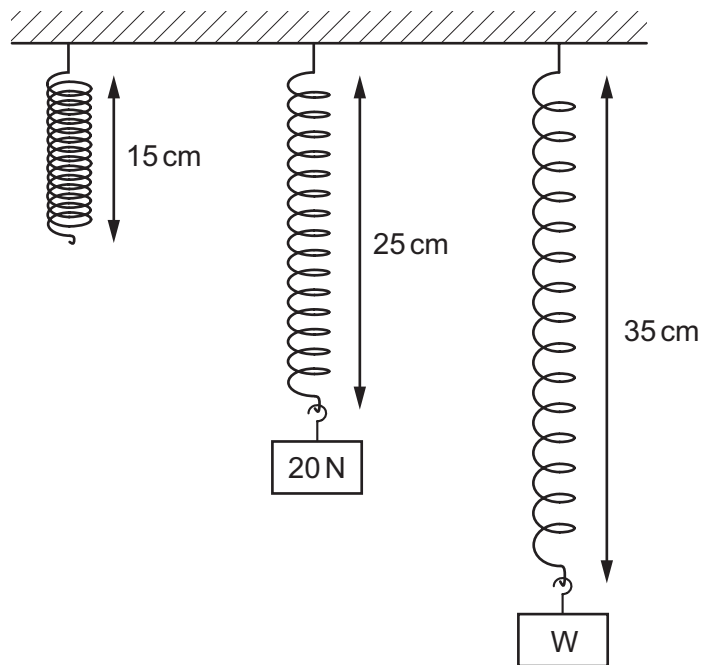
- A** 17.2 **B** 17.3 **C** 17.4 **D** 17.6

- 3 Four objects are each acted on by only two forces, as shown.

Which object is in equilibrium?



- 4 Different weights are hung from a spring. The diagram shows the original length of the spring, and the lengths when different weights are added.

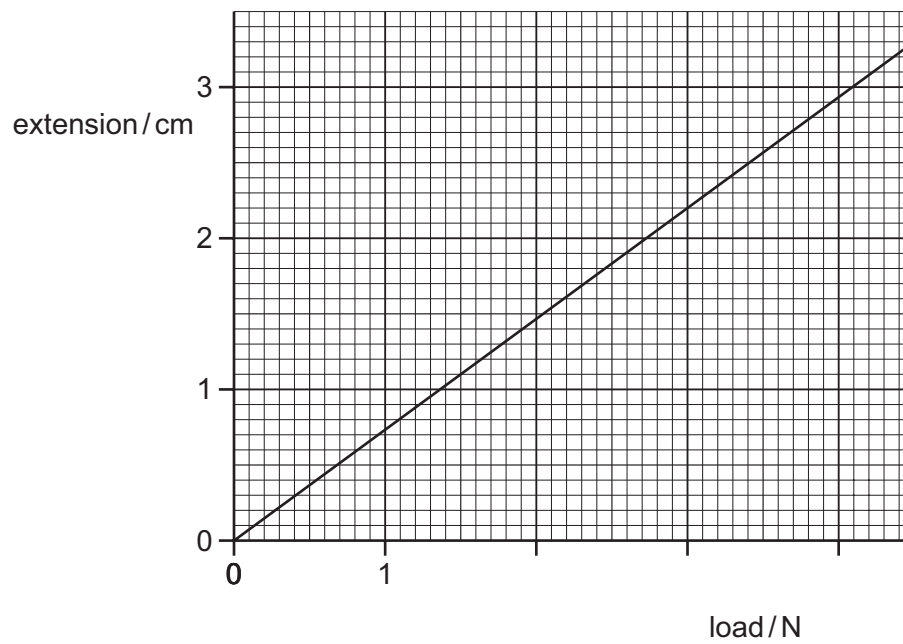


The extension of the spring is directly proportional to the weight hung from it.

What is the weight of W?

- A 30 N B 35 N C 40 N D 45 N

- 5 The extension-load graph for a spring is shown. The unstretched length of the spring is 17.0 cm.

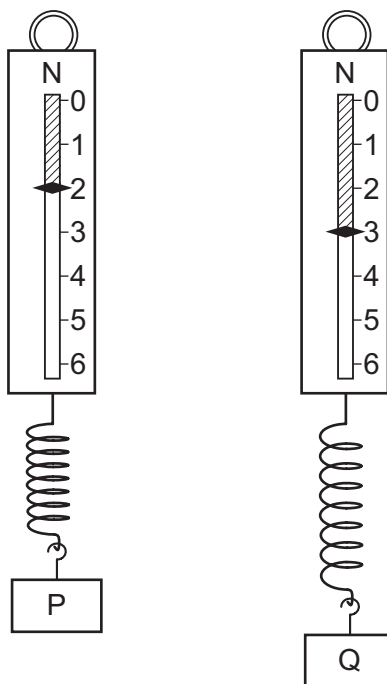


When an object is hung from the spring, the length of the spring is 19.2 cm.

What is the weight of the object?

- A** 1.4 N **B** 1.6 N **C** 2.6 N **D** 3.0 N

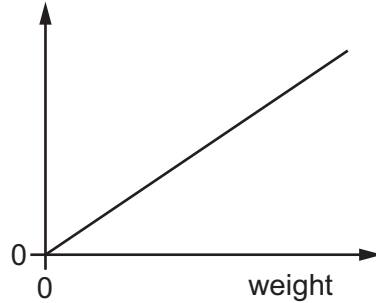
- 6 Two metal blocks P and Q have identical dimensions. They hang on identical spring balances.



What can be deduced about P and Q?

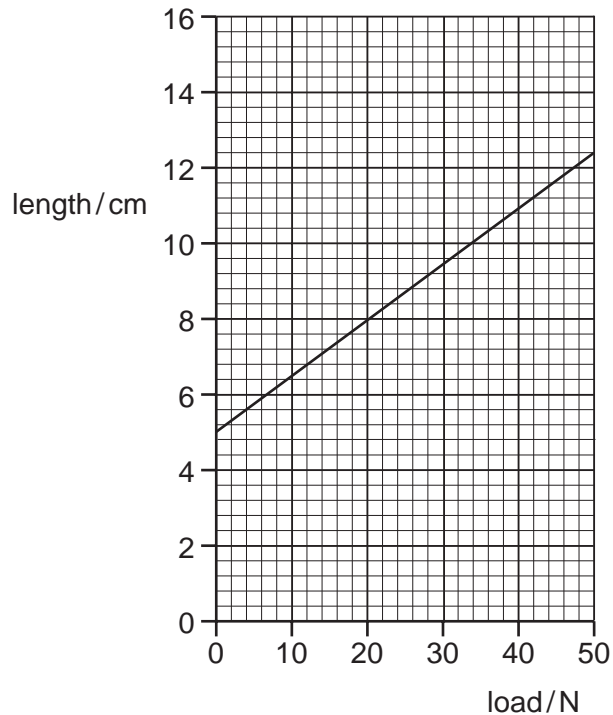
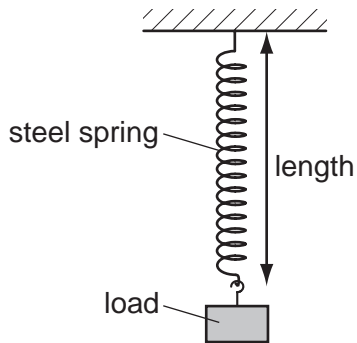
- A They have different volumes and different weights.
- B They have different volumes, but equal masses.
- C They have equal volumes and equal weights.
- D They have equal volumes, but different masses.

- 7 A student adds weights to an elastic cord. He measures the length of the cord for each weight. He then plots a graph from the results, as shown.



What has he plotted on the vertical axis?

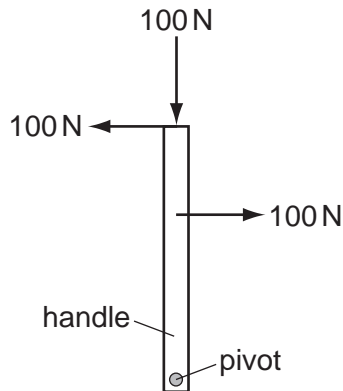
- A measured length
 - B original length
 - C (measured length + original length)
 - D (measured length – original length)
- 8 The diagrams show a steel spring and a graph of its length against the load applied to it.



What is the extension of the spring when a load of 20N is applied to it?

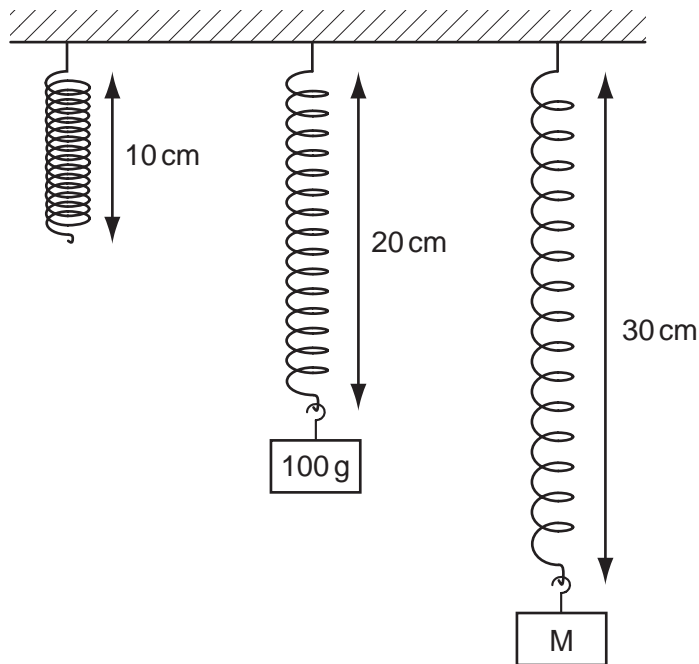
- A 3.0 cm
- B 4.5 cm
- C 5.0 cm
- D 8.0 cm

- 9 The diagram shows a handle with three forces, each 100 N, applied to it. The handle is free to move.



What is the effect of the forces on the handle?

- A The handle will move downwards.
 - B The handle will not move.
 - C The handle will turn anticlockwise (to the left).
 - D The handle will turn clockwise (to the right).
- 10 Objects with different masses are hung on a spring. The diagram shows how much the spring stretches.



The extension of the spring is directly proportional to the mass hung on it.

What is the mass of object M?

- A 110g
- B 150g
- C 200g
- D 300g