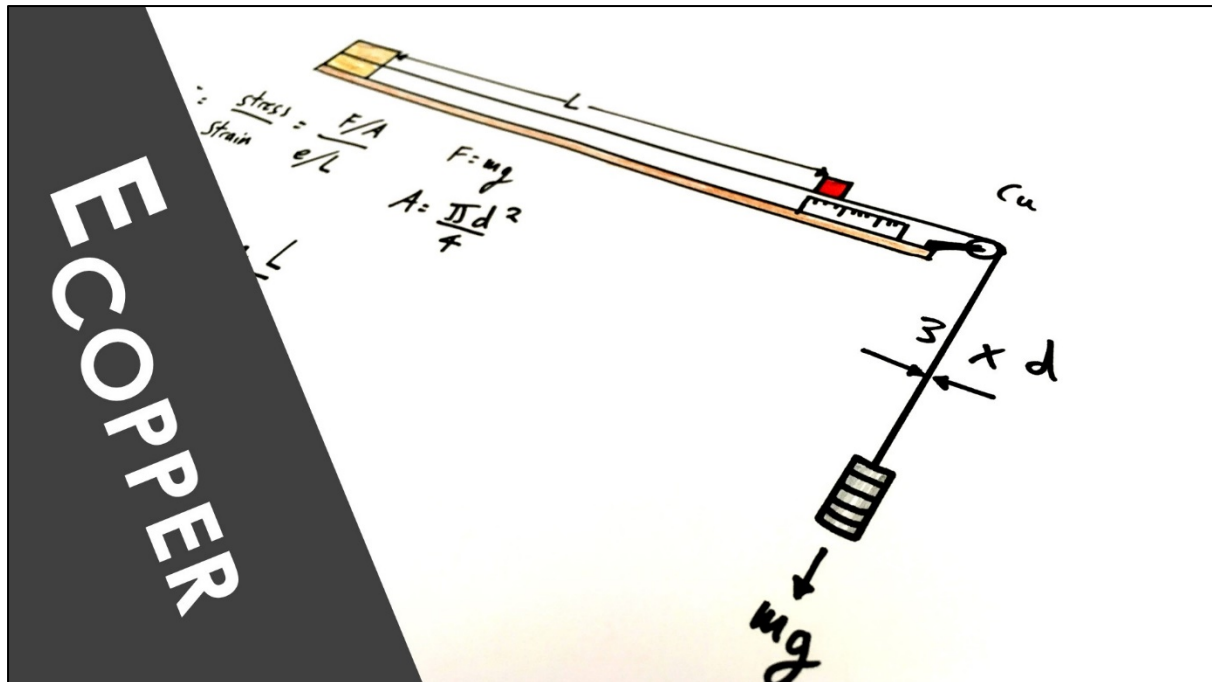


A Level Physics

4th Jan 2021 - Young Modulus Practical

Suitable for ALL exam boards



This session will look at a classic practical. A wire is stretched and measurements are taken to determine the value of the Young Modulus, E , for that material.

Don't forget to **subscribe** on **YouTube** and turn on **notification** to be reminded about the **weekly livestreams** to support you as you prepare for any exams.

Question taken from:

Edexcel IAL Physics - June 2017 - Paper 3 (WPH03) - Question 8

- 8 A student investigated how the extension Δx of a wire varies with applied force F . He obtained the following results.

mean diameter of wire = 0.245 mm

original length of wire = 1.35 m

Mass / g	F / N	Δx / cm
200	1.96	0.3
400	3.92	0.55
500	4.91	0.7
600	5.9	0.85
1000	9.81	4.2
1100	10.8	6.4

- (a) Criticise his results.

(3)

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- (b) Describe how the student should measure the diameter of the wire.

(2)

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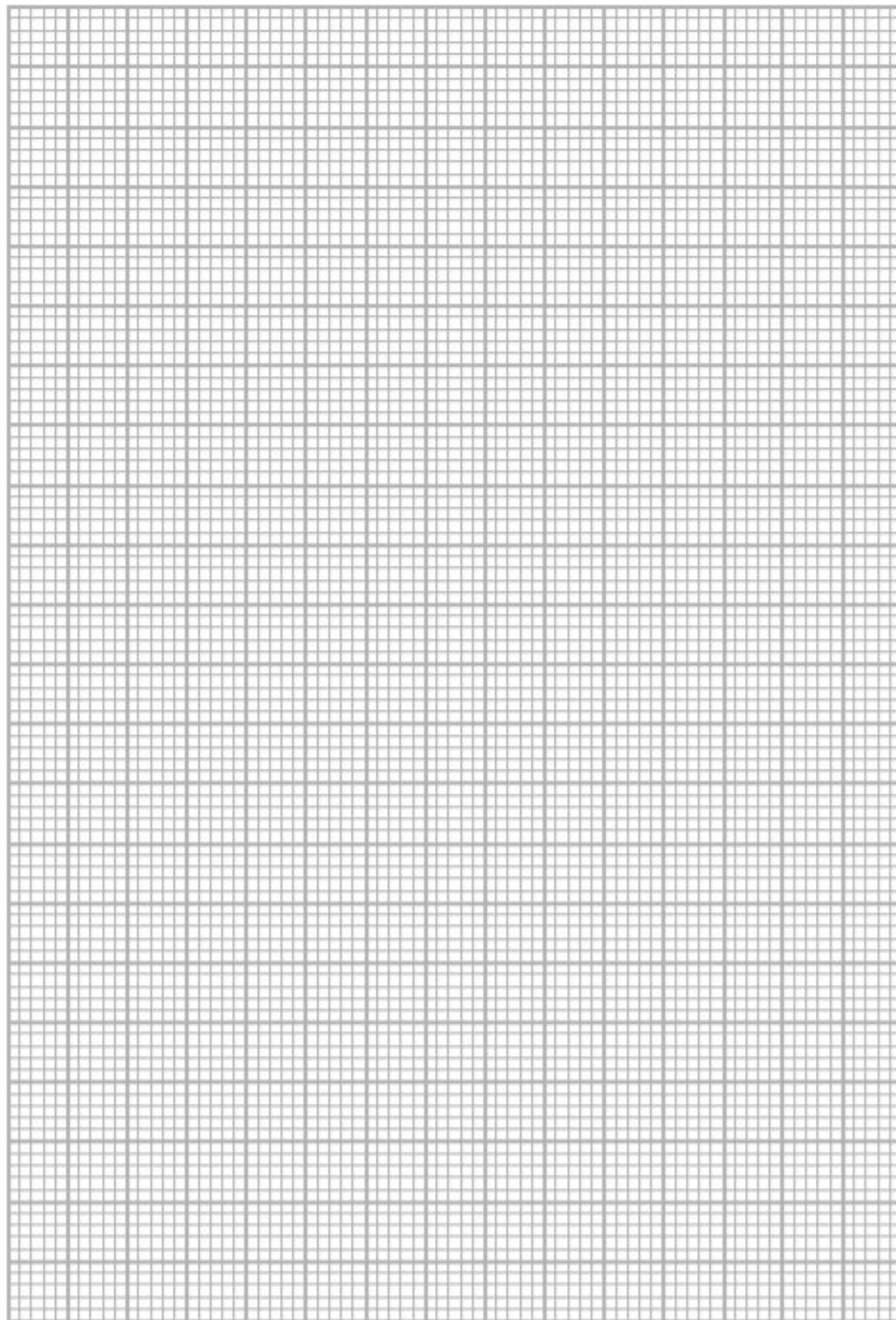
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(c) (i) Plot a graph of F on the y -axis against Δx on the x -axis on the grid provided and draw a line of best fit.

(5)



(ii) Comment on the shape of your graph.

(2)

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(iii) Use your graph to determine the Young modulus of the material the wire is made from.

(4)

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Young modulus =

(Total for Question 8 = 16 marks)

