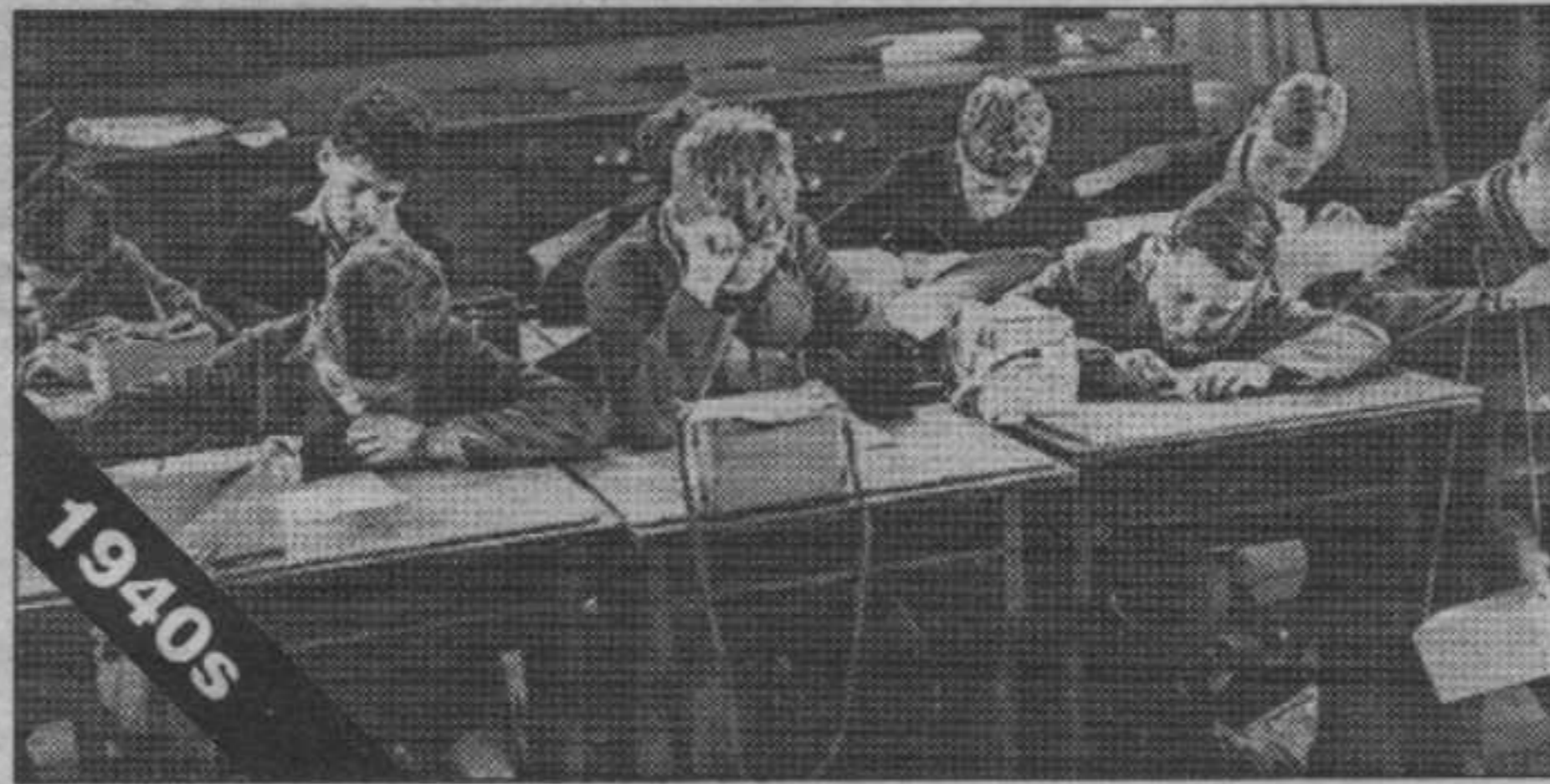
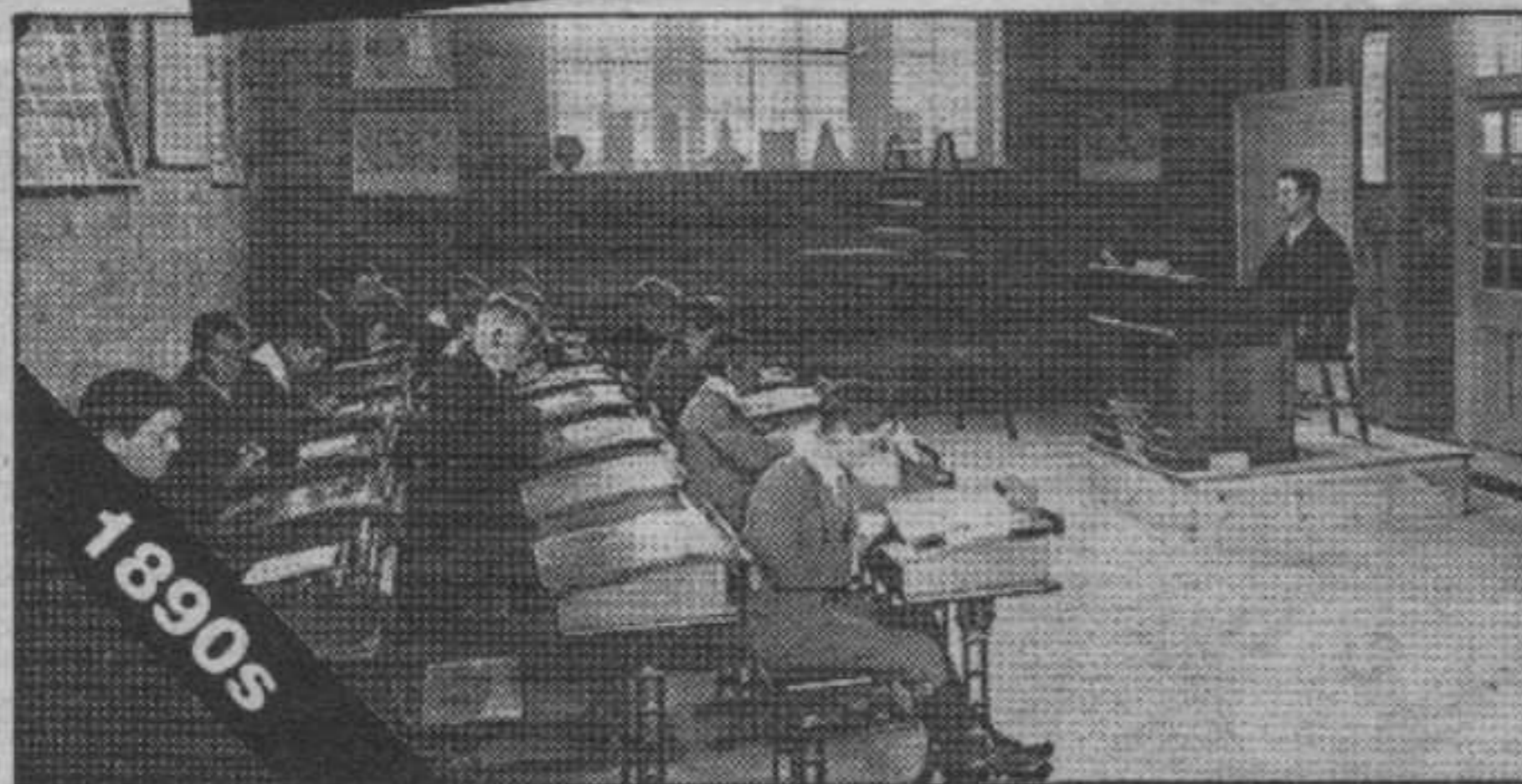


A question for the Class of '97...

Q: Determine by a geometrical construction the force which, together with a number of given forces, will keep a particle in equilibrium *

That's the Class of 1897, by the way



THE MOMENT of truth came when the class of '97 turned over their exam papers and started to read the questions.

"Give an account of the position and general structure of the liver. Where does most of the blood supplying the liver come from, and under what circumstances and in what manner does this blood vary in composition?"

"Draw a map of the West Coast of England and Wales, naming the counties on the coast and the principal capes and inlets. Mark the positions of Aberystwyth, Cardiff, Carlisle, Chester, Holyhead, Ilfracombe, Preston, Southport, and Swansea."

"Determine by a geometrical construction the force which, together with a number of given forces, will keep a particle in equilibrium..."

Could you answer these posers — let alone your children? These are typical of the examination questions 16-year-olds took in their stride. Not children of these days, mind you; these questions are not from this year's GCSEs but from the School Certificate exams of 1897.

Employers and parents insist exams are not as tough as they used to be, while educationalists claim they are. The issue can be resolved only by looking back to the test papers of the past.

Today's GCSE is descended from the first school examinations, which were set by the Cambridge Board in 1858. For that first year, the pupils sitting the papers were 15, but that was soon raised to 16 — the age at which major exams are still taken today.

As disappointed employers know, educationalists always justify the fall in standards. A question in the first-ever School Certificate exam asked: "Draw a map of Great Britain, marking the principal rivers."

That, of course, must have been because they didn't have photocopiers.

GCSE results are out tomorrow and the question of whether exams are getting easier will be raised again. **BRIAN J FORD** has absolutely no doubts about the correct answer

These days children have printed maps, and (in the age of the motorway) are far more widely travelled.

That excuse doesn't work, though. Here's another question from the 1858 exam. "Describe in words the coastline of England from the mouth of the Thames to the mouth of the Severn."

Perhaps today's youngsters are more European in their outlook and don't need to know so much about Britain. That sounds feasible

'We are losing a generation of children. That is the worst abuse of all'

until you read the next question from the mid-Victorian exam.

"Draw an outline map, showing the coastline of Europe from the mouth of the Danube to the mouth of the Rhine; mark the chief rivers and the chief ranges of mountains between those two rivers and the coast."

In truth, yesterday's schoolchildren were expected to know far more about Europe than we do today. Few modern youngsters know where the capitals of Europe are.

A question from this year's Southern Examining Group GCSE paper on Modular Mathematics (Intermediate Money Management) begins: "Polly receives 600 Christmas cards from a charity. She sells three-quarters of them at work.

How many cards does Polly sell at work?"

Nobody doubts that young people need to know how to divide up resources, so the question is certainly relevant. Now, step back 50 years. The School Certificate paper for July 1947 posed a similar test.

"In forming its annual budget, an Urban District Council allows for the costs of (a) services provided by itself; (b) services provided by the County Council, and (c) services provided by other authorities. If (a), (b) and (c) are in the ratio of 7:15:2 and the cost of (a) is £427,000 find the costs of (b) and (c) and the total amount of the budget."

The 1997 test calls for simple division, and is the kind of calculation a 10-year-old could perform. The 1947 question demands a far more solid grasp of mathematics, and candidates had to understand how to adapt their understanding to solve complex problems.

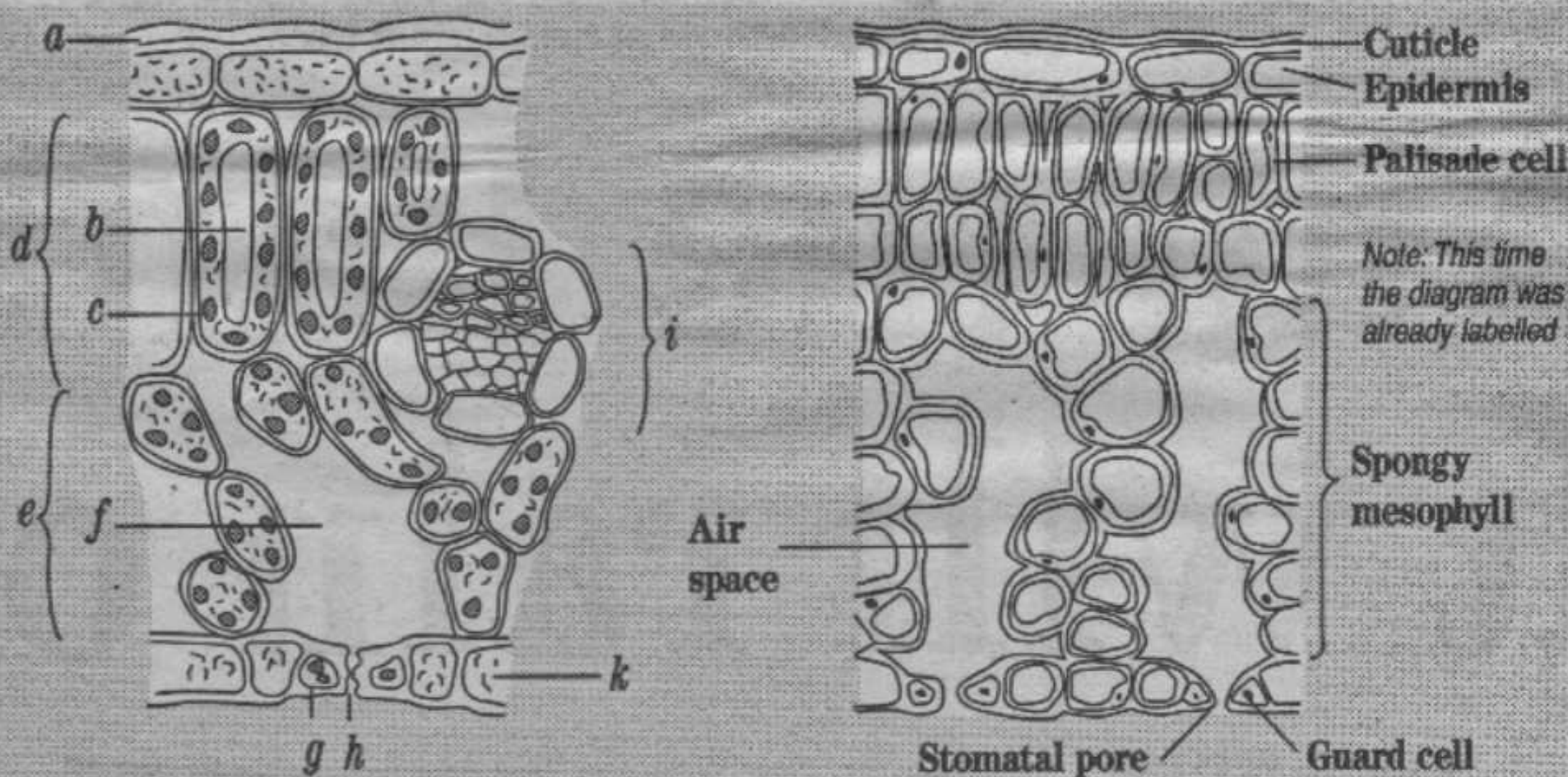
There is a subtler point too — the question of childhood aspirations. The question about a local authority's budget from 50 years ago implies that the children might grow up to be, what, councillors? Company directors? Householders with an eye to what the council is doing? This year's question about Polly selling charity cards on the factory floor is not much of a target at which to aim.

The world of business is poorly served by modern school exams. Here is a typical example from this year's GCSE.

"A bike is on sale for £260 at a local shop, Dynamics. Dynamics bought the mountain bike from a wholesaler for £232. What is the percentage profit that Dynamics makes when it sells the mountain bike?"

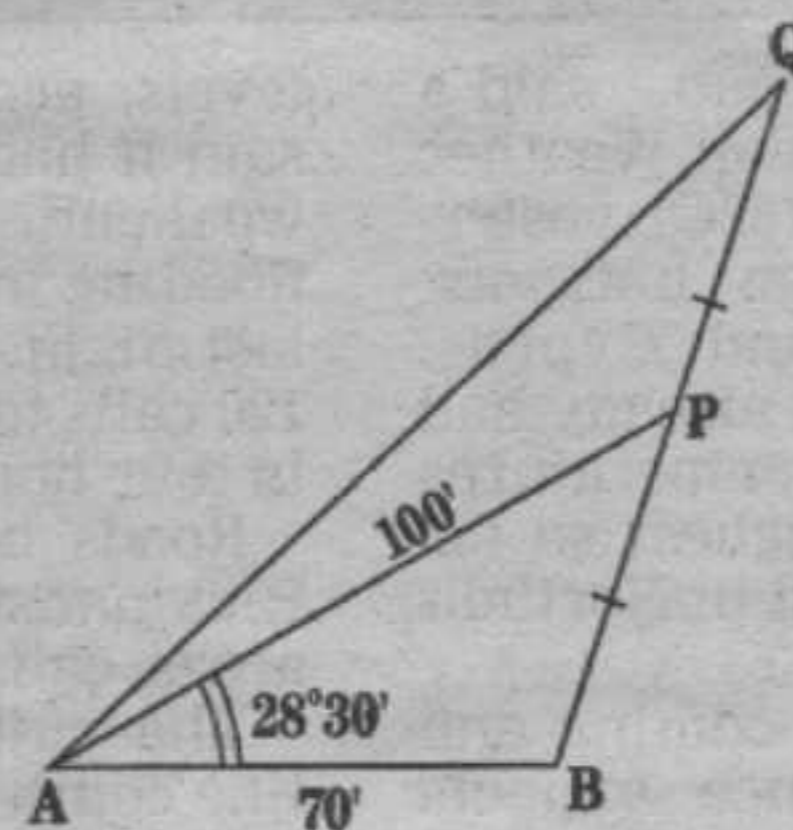
The question in the 1947 paper was far closer to the complexities of business. "During 1945 a manufacturer produced 3,600 articles at a cost of 1s 8d each and sold them for 2s 6d each. In 1946 he produced twice as many articles and reduced

... AND WHAT A DIFFERENCE EVEN 50 YEARS MAKE

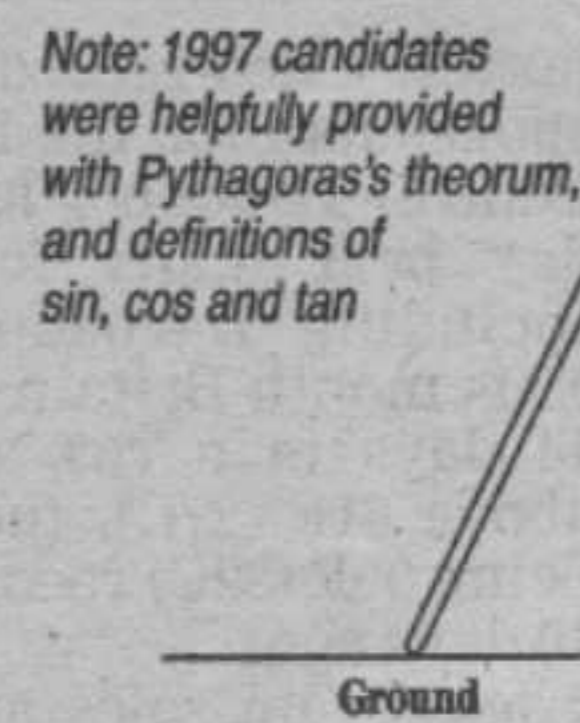


1946: Question: This is a leaf's cell structure. Write down the names of a, b, c, d, e, f, g, h, i and k in the diagram. Name the chief activities carried on in leaves. What part in these activities do a, c and h play? (Cambridge Board School Certificate, Biology)

1997: Question: The diagram represents a cross-section of a leaf, drawn with the chloroplasts missing. (a) For each cell, give one of its functions and describe how it is adapted to carry out that function: Guard cell: Palisade cell: (Southern Examining Group, GCSE, Science: Biology)



1947: Trigonometry
Question: In the figure, which is not drawn to scale, BP=PQ, AB=70ft, AP=100ft, and the angle BAP=28°30'. By drawing perpendiculars from P and Q to AB produced, calculate: (i) the angle ABP, (ii) the angle QAB (Cambridge Board School Certificate, Mathematics)



1997: Trigonometry
Question: A ladder, on horizontal ground, leans against a vertical wall. The top of the ladder reaches to a vertical height of 1.9m and the foot of the ladder is 1.2m from the base of the wall. (a) Calculate the length of the ladder. The ladder is now placed against a wall so that the base of the ladder is at an angle of 72° with the ground. (b) Calculate the new vertical height of the ladder above the ground. (Southern Examining Group, GCSE Modular Mathematics)

the selling price of each by 20 per cent. If the ratio of the total profit in 1946 to that of 1945 was 7:3, find the percentage by which the cost of manufacturing each article was reduced. Answer correct to three significant figures."

The 1997 paper calls for a simple understanding of percentage profit, but 50 years ago this concept was applied to a far more complex situation. Last week I

bought four electric lamps at 40p each. The young man who served me added them all up — 40p + 40p + 40p + 40p — on his calculator. Starve a child of physical nourishment and you can be taken to court. Somehow, it is still acceptable to ignore nourishing the brain. We are losing a generation of children. To my mind, that's the worse abuse of all.

* Brian J Ford, 58, has no idea of the answer to the question posed above. He is formerly a director of Mensa, and is Member of Council at the Institute of Biology, London, the Society for the Application of Research in Cambridge and the McCrone Institute in Chicago. If any readers are able to offer him enlightenment, they are welcome to write to him care of the Standard.