# AN ROINN OIDEACHAIS
## (Department of Education).

## BRAINNSE AN MHEADHON-OIDEACHAIS
### (Secondary Education Branch).

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## INTERMEDIATE CERTIFICATE EXAMINATION, 1936.

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# MATHEMATICS (Arithmetic).

*FRIDAY, 19th JUNE.*—Morning, 10 a.m. to 12 noon.

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The total number of questions answered should not exceed *six.*

(Candidates should see that answers to questions in excess of *six* are cancelled).

Mathematical Tables may be obtained from the Superintendent.

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1. Find the cost of 42 boxes of tea, each containing 3 qr. 10 lb. 8 oz. at £7 14s. per cwt.

How many boxes could be obtained for £51 19s. 6d. at the same rate?

[30 marks.]

2. A formula for the area of a triangle is $\sqrt{s(s-a)(s-b)(s-c)}$ where $a$, $b$, $c$ are the sides and $2s = a+b+c$. Use it to find the area of a triangle whose sides are 3·16, 4·38, 5·92 inches long respectively.

Give your answer in square inches, to one decimal place.

[You may use logarithms if you wish.]

[30 marks.]

3. Show that £1 amounts to $£(1\cdot02)^3$ in three years at compound interest of 2% p.a.

Find the compound interest, to the nearest penny, on £85 for 3 years at 2% p.a.

[30 marks.]

4. If £1=74·43 francs and 1 dollar=15·09 francs, how many dollars should one get for (i) £1, (ii) £86 17s. 4d. ?

[30 marks.]

5. A merchant sold half of his stock at a profit of 30%, one-third at a profit of 15% and the remainder at cost price. If his total takings amounted to £648, what did his stock cost him ?

[32 marks.]

6. The number of spectators at a football match was 36,760. The charges for admission were 6d., 1s. and 2s. and some were admitted free. If the numbers paying 6d., 1s. and 2s. respectively were in the ratio 10 : 5 : 1, and the total receipts were £1,368, how many were admitted free ?

[33 marks.]

7. Use logarithms to find the value of

(i) $60·09 \div 0·0378$ ;

(ii) $\dfrac{1}{\sqrt{\pi}}$ ;

(iii) $(2·37)^{6·09}$.

[35 marks.]

8. Calculate the depth of water in a cylindrical tank which is one foot in diameter and which contains 14 gallons of water.

If a gallon of water in another cylindrical tank reaches the same depth, what is the diameter of this tank ?

Answer to the nearest inch in each case.

[35 marks.]

9. Number 698 of a daily newspaper was published on Saturday, 11th January, 1936. Assuming that the paper was issued every weekday without interruption, find the day and the date of the first issue.

[35 marks.]