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(Department of Education)

INTERMEDIATE CERTIFICATE EXAMINATION, 1960.

MATHEMATICS (Arithmetic).

WEDNESDAY, 8th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

Mathematical Tables may be obtained from the Superintendent.

1. Find what £1,600 would amount to in 3 years at 5% per annum compound interest.
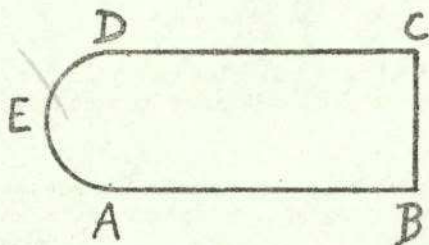
[25 marks.]

2. A field of $5\frac{1}{2}$ acres produces 13 tons, 12 cwt. of sugar-beet per acre. If sugar-beet is worth £5 7s. 6d. a ton, find the value of the produce of the field.

[25 marks.]

3. From the formula $n=\frac{1}{2}\sqrt{\dfrac{gt}{ml}}$, find the value of n, correct to three significant figures, when $t=4{,}730$, $m=1\cdot34$, $l=83$ and $g=981$.

[30 marks.]

4. The floor of a ballroom is in the shape ABCDE (see diagram) where ABCD is a rectangle and DEA is a semi-circle. AB represents 85 ft. and BC represents 35 ft. Find the area of the floor, correct to the nearest square foot.

[30 marks.]

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5. (i) Express £1 7s. 5d. as a decimal of £8, correct to three places of decimals.

   (ii) Find the H.C.F. and the L.C.M. of 24 and 450.
Find what other pairs of whole numbers have the same H.C.F. and the same L.C.M. as 24 and 450.

[30 marks.]

6. A closed rectangular box contains twenty cigarettes each of which is 2·8 ins. in length and has a diameter of 0·3 ins. The internal dimensions of the box are 3·2 ins., 2·85 ins., 0·7 ins. Express the volume of the twenty cigarettes as a percentage of the capacity of the box, correct to three significant figures.

[30 marks.]

7. (i) An article is bought for £3 4s. and sold for £4. Find the percentage profit.

   (ii) If the selling price of an article were increased by 10%, the percentage profit would be doubled. Find the percentage profit being made at present.

[30 marks.]