AN ROINN OIDEACHAIS

INTERMEDIATE CERTIFICATE EXAMINATION, 1968

ELEMENTARY MATHEMATICS (Arithmetic)
FOR GIRLS ONLY

WEDNESDAY, 12th JUNE - Morning, 10 to 12

All questions to be answered.
All questions carry equal marks.

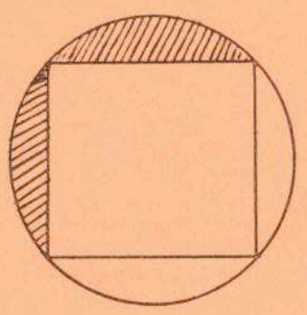
1. Find the cost of repairing 14 miles 5 furlongs 25 perches of roadway at £512 per mile.

2. (a) Evaluate $(7\frac{2}{7} \div 1\frac{8}{9}) - (2\frac{5}{11} \times 1\frac{2}{9})$.

(b) Show that the value of $1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \frac{1}{6}$ lies between 0·6 and 0·66.

3. What would £500 amount to in 6 years at $4\frac{1}{2}\%$ per annum, simple interest ?
What sum of money invested for 6 years at $4\frac{1}{2}\%$ per annum, simple interest, would amount to £508 ?

4. The length of a diagonal of a square is 7·8 cm. Show that the area of the square, correct to the nearest sq. cm. is 30 sq. cm.
A circle is drawn through the four vertices of the square. Calculate the area of the shaded part as shown in the diagram, correct to the nearest square centimetre.
(Take $\pi = 3{\cdot}14$)



5. (a) Express £1. 18s. 4d. as a decimal of £3. 1s. 4d.

(b) Which is the heavier: 0·23 of 21 st. or $\frac{5}{6}$ of 67 lb. ?

6. (a) An article bought for £5. 8s. was sold for £7. 4s. Find the percentage profit.

(b) An article is sold for £73. 6s. 0d. thus giving a profit of 60%. Find the cost price.

7. The volume of a solid cylinder of height 7 in. is 352 cubic inches. Calculate the radius of its base. (Take $\pi = \frac{22}{7}$).

The cylinder is placed upright in a rectangular box of square base so that the top of the cylinder just reaches the top of the box. Find the capacity (internal volume) of the smallest possible box.

8. A motorist sets out to travel from A to B a distance of 90 miles. He leaves A at 12 noon and travels at 30 m.p.h. until 1 p.m. He then stops for lunch and at 2 p.m. he continues his journey at a certain fixed speed reaching B at 3.30. p.m.
Draw a graph to represent his journey and from your graph find:

(i) The time at which he is 45 miles from A.

(ii) His distance from B at 3.10 p.m.