

INTERMEDIATE CERTIFICATE EXAMINATION, 1967

ELEMENTARY MATHEMATICS (Arithmetic)
FOR GIRLS ONLY

FRIDAY, 9th JUNE - Morning, 10 to 12

All questions to be answered.

All questions carry equal marks.

1. Find the total cost of the following articles:

1 dozen electric light bulbs @ 2s. 7½d. each.

5 packets of clothes' pegs @ 9½d. a packet.

2½ oz. of spice @ 8s. 0d. per pound.

½ stone of potatoes @ £1. 13s. 4d. per cwt.

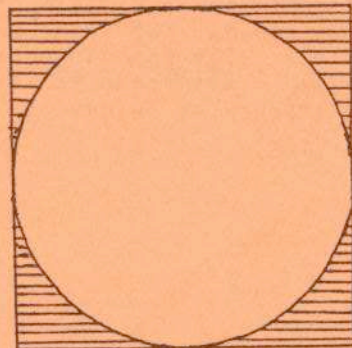
2. Simplify (i) $\frac{\frac{3}{4} \text{ of } 3\frac{11}{15}}{3\frac{1}{3} - \frac{8}{15}}$;(ii) $\frac{91.14 \times 18.7}{11.9 \times 71.61}$.

3. Find the simple interest on £820 for 15 years at 8% per annum.

What sum of money would yield the same interest if it was invested for 6 years at 4% per annum simple interest ?

4. The area of a square is 295.84 sq. cm. Find the length of a side of the square.

A circle is drawn in the square so as to touch each side (see diagram). Calculate the area of the shaded part as shown in the diagram, correct to the nearest centimetre.

(Take $\pi = 3.14$)

5. (a) An aeroplane is travelling at 300 m.p.h. Express this speed in ft. per sec.

(b) Express (i) 660 ft. as a decimal of one mile,
(ii) 35 lb. as a decimal of one ton.

6. A shopkeeper buys a large number of a certain article, each article costing him £2. 10s. He marks a selling price on each article so as to give him a profit of 8%. What is his selling price ?

During a sale the shopkeeper reduces that selling price by a certain percentage so as to give him a profit of only one shilling on each article. By what percentage does he reduce the selling price ?

7. A rectangular box is such that its base and lid are squares of side 4 ft. (internal measurements). If the capacity (internal volume) of the box is 40 cb. ft., find its internal height.

Find also the volume of the greatest solid cylinder, which when standing upright, will fit into the box.

(Take $\pi = \frac{22}{7}$).

8. A girl sets out on her bicycle to travel from her home to her aunt's house, a distance of 16 miles. She sets out at 2 p.m. and travels at 8 m.p.h. for 1½ hours. She then notices that she has lost her hat and cycles back along the road at 4 m.p.h. for 30 minutes before finding it. She then rests for half an hour before continuing her journey at 10 m.p.h. to her aunt's house. Draw a graph to represent her journey and from your graph find the time at which she reaches her aunt's house.