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(Department of Education.)

INTERMEDIATE CERTIFICATE EXAMINATION, 1946.

ELEMENTARY MATHEMATICS (Arithmetic).

FOR GIRLS ONLY.

TUESDAY, 18*th JUNE*.—MORNING, 10 TO 12.

Six questions may be answered.

All questions carry equal marks.

1. Simplify :

(i) $\dfrac{0{\cdot}064 \times 1{\cdot}96 + 3{\cdot}92}{6{\cdot}88 - 0{\cdot}01 \times 13{\cdot}76}$;

(ii) $\dfrac{\frac{4}{5}\left(\frac{7}{4} - \frac{1}{8}\right) - \frac{1}{2} \times \frac{2}{3} - \frac{5}{6}}{\frac{3}{4} \div \frac{1}{16} - 3\frac{2}{3}}$.

2. Find the simple interest on £481 5s. for 6 years at $3\frac{3}{4}\%$ per annum.

3. A person does 0·125 of a journey by car and 0·8 of it by train. He walks the remainder which is 6 miles. How many miles are there in the whole journey ? Write down the distance he walks as a decimal of the distance he travels by car.

4. A person buys a number of oranges—half of them at 3d. each and the other half at 2d. each. He mixes them and sells them by the dozen. If he makes a profit of 20%, for how much does he sell each dozen ?

5. Find the value of $\sqrt{742{\cdot}5}$, correct to two places of decimals.

6. If 12 women can earn £86 8s. 0d. in 36 days, how much can one woman earn in one day ?

Assuming that 4 girls can earn as much as 3 women, how much would 25 girls earn in 24 days ?

7. A rectangular trough contains 970·2 gallons of water. On the inside the trough is 8 feet 3 inches long and 4 feet 8 inches wide. Calculate the depth of the water to the nearest inch.

[One cubic foot of water weighs 62·3 lb.; one gallon of water weighs 10 lbs.]

8. A figure is made up of a square ABCD and of a semi-circle CFD which is outside the square. The diagonal of the square is 80 yards long.

Find the area of the figure correct to the nearest square yard.

(π=3·1416).

9. Solve the following question graphically:

A cyclist leaves his house at noon and travels at the rate of 10 miles per hour. He rests for 12 minutes after each hour's cycling. A motorist leaves the same house at 2 p.m. and follows the cyclist at the rate of 25 miles per hour. At what time, and how far from the house, does the motorist overtake the cyclist?