

## INTERMEDIATE CERTIFICATE EXAMINATION, 1965

## ELEMENTARY MATHEMATICS (ALGEBRA)

## FOR GIRLS ONLY

WEDNESDAY, 23rd JUNE - Morning, 10 to 12

All questions to be answered.

All questions carry equal marks.

1. Solve the following simultaneous equations:

$$x - y = 4,$$

$$6x + y = -11.$$

2. (a) Find the value of
- $x$
- which satisfies the equation

$$\frac{x}{4} - \frac{1}{6}(5x + 8) = \frac{2x}{3} - 3.$$

- (b) Give any three values of
- $x$
- for which
- $x - 2$
- is greater than 3.

3. Find, correct to two decimal places, the values of
- $x$
- which satisfy the equation

$$(2x - 7)^2 = 11.$$

4. Factorise:-

(i)  $ac + bc - ba - da;$

(ii)  $x^2 - 7x - 30;$

(iii)  $a^2 - (x - y)^2;$

(iv)  $(a + 1)^3 + a^3.$

5. A girl takes three-quarters of an hour to do a journey of six miles. She does one part of the journey on foot travelling at the rate of two miles per hour and the remaining part of the journey by bus travelling at the rate of 20 miles per hour. How long is each part?

6. Draw the graph of
- $x^2 - x - 1$
- for values of
- $x$
- from
- $x = -3$
- to
- $x = +3$
- .

Use the graph

(a) to solve the equation  $x^2 - x - 1 = 0,$

(b) to find the value of  $x^2 - x - 1$  (i) when  $x = \frac{1}{2}$ , (ii) when  $x = 2\frac{1}{2}.$