

Grade 11 (Mathematics)

- 1) From book page 42 #1,2,3,4.
- 2) From book page 29, 30, 31 # 22, 27,32.
- 3) Solve each of the following equations:
 - a. $x^2 - 14x + 45 = 0$
 - b. $9x^4 - 4x^2 - 5 = 0$
 - c. $x^2 - 3x = 0$
 - d. $9x^2 + 42x + 49 = 0$
 - e. $-6x^2 - 13x - 7 = 0$
 - f. $(x + 1)(x + 2) = (2x - 1)(2x - 10)$
 - g. $\frac{x+3}{x-3} + \frac{x-6}{x+6} = \frac{11}{5}$

- 4) Consider the equation (E):

$$(2m - 7)x^2 + 2(2m + 5)x - 14m + 1 = 0$$

Where m is a real parameter.

- a. Solve this equation for $m = \frac{7}{2}$
 - b. Determine the values of m for which (E) admits a double root and determine the double root .
- 5) Consider the equation $x^2 - 8x + q = 0$, let x_1 and x_2 be the roots of this equation
Determine q in each of the following cases :
 - a. $x_1 = \frac{-1}{x_2}$
 - b. $x_1 = 3x_2$
 - c. $3x_1 - 4x_2 = 3$

- 6) Consider the quadratic equation:

(E): $x^2 - 2(2m - 3)x + 4m - 3 = 0$ where m is a real parameter

- a. Study, according to the values of m the existence of the roots of (E).
- b. Designate by x' and x'' the roots of (E) when they exist.
Determine the set of values of m for which :

$$\frac{x'}{x''} + \frac{x'''}{x'} = \frac{32m}{5} - 14$$

- 7) Solve each of the following systems :

- a. $\begin{cases} x^2 + y^2 = 5 \\ xy = 2 \end{cases}$
- b. $\begin{cases} x^2 - y^2 = \sqrt{2} \\ xy = 1 \end{cases}$