1. Open parentheses and expand the following expressions
    (a) $(a - b)^2 =$
    (b) $(a + b)^3 =$
2. Expand as sums of powers of x:
$$(3x - 2)(1 - 4x)^2$$
3. A group of 30 people want to select a chairperson and three associates. How many ways there are for them to do so?
4. Solve the equation
$$x + \frac{1}{x} = 5.2$$
5. Consider the following quadratic equation:
$$x^2 - 7x - 8 = 0$$
    (a) What is the discriminant of this equation?
    (b) Sketch a graph of this quadratic polynomial
    (c) Solve the equation.
6. Let $x + y = 9$ and $xy = 18$
    (a) Write down the quadratic equation so that x and y are its solutions.
    (b) Calculate $x^2 + y^2$.
7. Write down the following fraction in a form $a + b\sqrt{3}$:
$$\frac{2 - 5\sqrt{3}}{\sqrt{3} + 1}$$
8. Solve the following inequality. Write your answer as a set of possible values for x.
$$\frac{(x - 3)^2(x + 2)}{x - 4} \geq 0$$