Solving Quadratic Equations (C) by Formula

$$\text{If } ax^2 + bx + c = 0, \text{ then } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Section A — *Write down the values of a, b and c in each case then solve the equation using the quadratic formula. Leave answers to 2 decimal places.*

$x^2 + 3x - 1 = 0$

a = _____

b = _____

c = _____

Answer: _____

$6 - 3x - 2x^2 = 0$

a = _____

b = _____

c = _____

Answer: _____

$8x^2 - 7 = 0$

a = _____

b = _____

c = _____

Answer: _____

Section B — *Solve the following equations to 2 decimal places.*

1) $4x^2 + 9x + 1 = 0$ _____

2) $x^2 - 8x + 1 = 0$ _____

3) $7x^2 + 3x - 2 = 0$ _____

4) $3x^2 - 4x - 5 = 0$ _____

5) $5x - 1 - x^2 = 0$ _____

6) $4 - 3x - 2x^2 = 0$ _____

7) $2x^2 - 2x = 7x$ _____

8) $x(2x + 5) = 10$ _____

9) $(x - 1)^2 = 17$ _____

10) $2(3 - x) = (4x + 3)^2 + 6$ _____

Extension $\quad 3x^2 - x + 7 = 0$

A. What happens when you try to solve the equation above using the quadratic formula?

B. How does the value of $b^2 - 4ac$ explain your answer to part A.

C. What conditions involving *a, b,* and *c* for $ax^2 + bx + c = 0$ cause:

- No solutions

- Two solutions

- One solution