

No. 5 LINEAR AND QUADRATIC
EQUATIONS.

GIVEN-

Ans!

$$y = 2 - 3x \quad \text{--- (i)}$$

$$y = x^2 - 2 \quad \text{--- (ii)}$$

Algebraically

By putting the value of y from (i) in (ii)

$$2 - 3x = x^2 - 2$$

$$\Rightarrow x^2 + 3x - 4 = 0$$

$$\Rightarrow x^2 + 4x - x - 4 = 0$$

$$x(x+4) - 1(x+4) = 0$$

$$(x-1)(x+4) = 0$$

$$\Rightarrow x-1 = 0 \quad \text{or} \quad x+4 = 0$$

$$x = 1, \quad \text{or} \quad x = -4$$

from (i), $y = 2 - 3x$

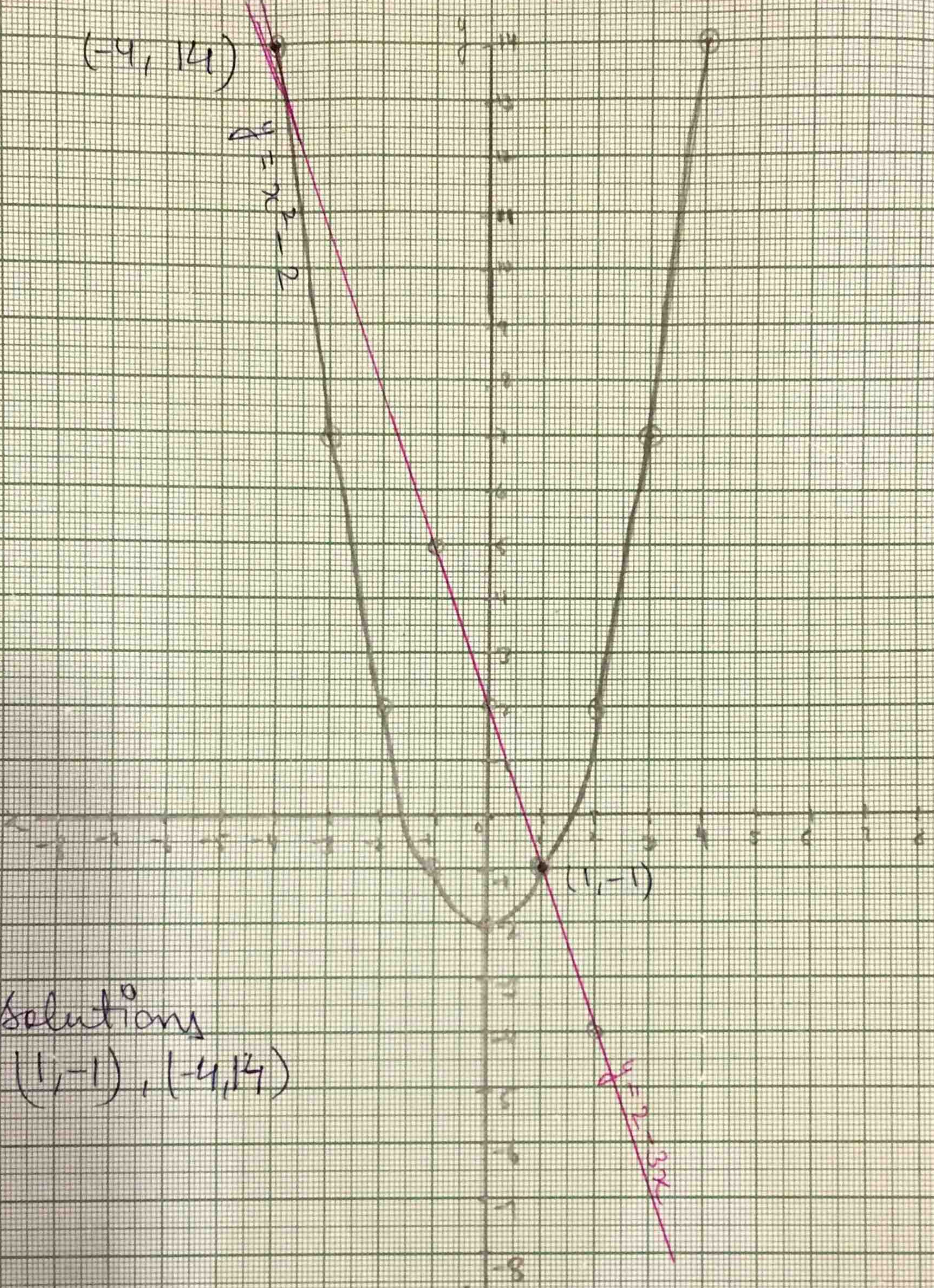
$$\text{for } x = 1, \quad y = 2 - 3(1) = 2 - 3 = -1$$

$$\text{for } x = -4, \quad y = 2 - 3(-4) = 2 + 12 = 14$$

\therefore , solutions: $(1, -1), (-4, 14)$.

$(-4, 14)$

$y = x^2 - 2$



Solutions

$(1, -1), (-4, 14)$

$$(i) y = 2 - 3x$$

$$(ii) y = x^2 - 2$$

x	y
0	2
1	-1
-1	5
2	-4

x	y
0	-2
1	-1
-1	-1
2	2
-2	2
3	7
-3	7
4	14
-4	14

Verification.

$$① = 1, -1$$

$$y = 2 - 3x$$

$$-1 = 2 - 3(1)$$

$$-1 = 2 - 3$$

$$\underline{-1 = -1} \rightarrow \text{verified.}$$

$$y = x^2 - 2$$

$$-1 = (1)^2 - 2$$

$$-1 = 1 - 2$$

$$\underline{-1 = -1} \rightarrow \text{verified.}$$

$$\textcircled{2} \quad -4, 14$$

$$y = 2 - 3x$$

$$14 = 2 - 3(-4)$$

$$14 = 2 + 12$$

$$\underline{14 = 14 \longrightarrow \text{verified.}}$$

$$y = x^2 - 2$$

$$14 = (-4)^2 - 2$$

$$14 = 16 - 2$$

$$\underline{14 = 14 \longrightarrow \text{verified.}}$$

Ans 2. Graphing a system of equations is not always the best solution

because,

- ① Graphical solutions will be difficult often because the intersection points may not be integer values and maybe hard to determine from the graph.
- ② Solution may end up with irrational points which we cannot take without approximations.