

الف) $x^2 - 9x + 1 = 0$

$(x-3)^2 - 1 = 0$

$(x-3)^2 = 1$

$x-3 = \pm 1$

$x-3 = -1 \rightarrow x=2$
 $x-3 = +1 = 4$

ب) $x^2 + 11x + 7 = 0$

$(x+4)^2 - 9 = 0$

$(x+4)^2 = 9$

$x+4 = \pm 3$

$x+4 = +3 \rightarrow x=-1$
 $x+4 = -3 \rightarrow x=-7$

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الف) $x^2 - 5x + 9 = 0$

$(x-2)(x-3) = 0$

$x=2$
 $x=3$

ب) $x^2 - 5x - 14 = 0$

$(x+2)(x-7) = 0$

$x=7$

$x=-2$

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الف) $x^2 - 3x - 5 = 0$

$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{3 \pm \sqrt{9+20}}{2}$

$= \frac{3 \pm \sqrt{29}}{2}$

$x = \frac{3 + \sqrt{29}}{2}$

$x = \frac{3 - \sqrt{29}}{2}$

ب) $2x^2 - 5x + \frac{1}{2} = 0$

$x = \frac{-b \pm \sqrt{\Delta}}{2a}$

$= \frac{5 \pm \sqrt{25-2}}{4}$

$x = \frac{5 + \sqrt{23}}{4} \quad x = \frac{5 - \sqrt{23}}{4}$

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الف) $x^2 - 2x + 2 = 0$

$2+1-2 = 0$

$x=1$

$x = \frac{c}{a} = \frac{2}{1} = 2$

ب) $5x^2 + x - 3 = 0$

$5-3=1$

$x=-1$

$x = \frac{-c}{a} = \frac{3}{5}$

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الف) $5x^2 - 12x + 7 = 0$

$x^2 - 12x + 20 = 0$

$(x-5)(x-4) = 0$

$x = \frac{12}{5}$

$x = \frac{0}{0} = 1$

ب) $3x^2 - 6x + 7 = 0$

$x^2 - 6x + 21 = 0$

$(x-3)(x-7) = 0$

$x = \frac{6}{3} = 2$

$x = \frac{7}{3}$

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$$ج) -2m^2 + 5m - 1 = 0$$

$$m = \frac{-5 \pm \sqrt{25 - 4 \times (-2)}}{2 \times (-2)}$$

$$m = \frac{-5 \pm \sqrt{33}}{-4}$$

$$m = \frac{-5 \pm \sqrt{33}}{-4}$$

$$ب) 2m^2 - m + 2 = 0$$

$$m = \frac{1 \pm \sqrt{1 - 16}}{4}$$

$$m = \frac{1 \pm \sqrt{-15}}{4}$$

جواب: حقیقی ندارد

$$د) 2m^2 - 4m + 2 = 0$$

$$m = \frac{4 \pm \sqrt{16 - 16}}{4}$$

$$m = \frac{4 \pm 0}{4}$$

$$m = 1$$

$$m = 1$$

$$ه) 2m^2 - m + 1 = 0$$

$$m = \frac{1 \pm \sqrt{1 - 8}}{4}$$

$$m = \frac{1 \pm \sqrt{-7}}{4}$$

$$m = \frac{1 \pm \sqrt{-7}}{4}$$

جواب: حقیقی ندارد

$$\Delta = b^2 - 4ac$$

$$0 > 9 - 16a$$

$$a > \frac{9}{16}$$

$$\Delta = b^2 - 4ac$$

$$0 \leq 9 - 16a$$

$$a \leq \frac{9}{16}$$

$$\Delta < 0 \text{ (ج)}$$

$$\Delta = b^2 - 4ac$$

$$\Delta = 9 - 16a$$

$$\Delta > 0$$

$$9 - 16a > 0$$

$$a < \frac{9}{16}$$

$$\Delta = 0 \text{ (د)}$$

$$\Delta = b^2 - 4ac$$

$$\Delta = 9 - 16a$$

$$\Delta = 0$$

$$9 - 16a = 0$$

$$a = \frac{9}{16}$$

$$\Delta > 0 \text{ (الف)}$$

$$\Delta = b^2 - 4ac$$

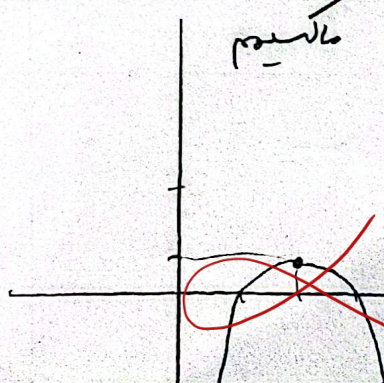
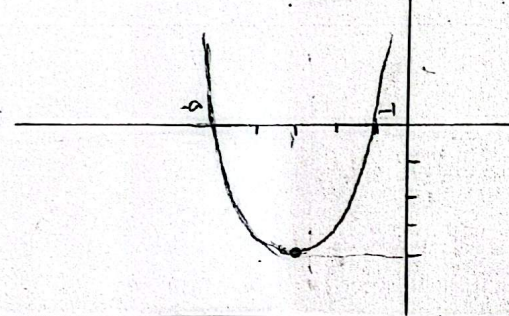
$$0 = 9 - 16a$$

$$16a = 9$$

$$a = \frac{9}{16}$$

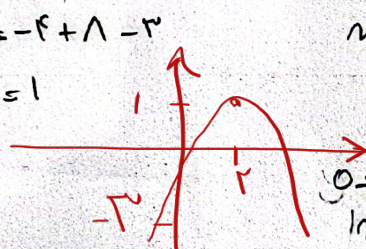
$$y = 9 + 4x + 4 \dots \dots y = -x^2$$

$$m = \frac{-b}{2a} = \frac{-4}{2} = -2$$



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

$$y = 1$$



$$m = \frac{-b}{2a} = \frac{-4}{-2} = 2$$

$$m = 1$$

$$m = \frac{c}{a} = \frac{-3}{-1} = 3$$

$$m = 1$$

$$m = 3$$

$$S = \frac{2 + \sqrt{17} + 2 - \sqrt{17}}{2} = 2$$

$$P = \frac{(2 + \sqrt{17})(2 - \sqrt{17})}{2} = \frac{4 - 17}{2} = -\frac{13}{2}$$

$$S^2 - 2P = 9 - (2 \times (-\frac{13}{2})) = 9 - (-13) = 22$$

$$\therefore S^2 - 2P = 22 - 2 \times 2 \times (-\frac{13}{2}) = 22 - (-13) = 35$$

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

$$x = \frac{3 \pm \sqrt{9 + 16}}{4}$$

$$x = \frac{3 \pm \sqrt{25}}{4}$$

$$x = \frac{3 + 5}{4}$$

$$x = \frac{3 - 5}{4}$$