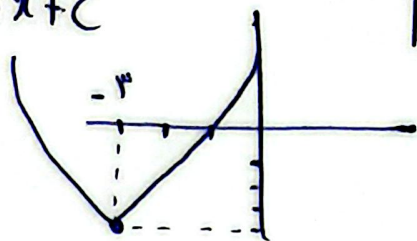


$$y = x^2 + 4x + 5$$

$$y = ax^2 + bx + c$$



min

$$\frac{-b}{2a}$$

$$\frac{-4}{2} = -2$$

(الف)

$$y = -1$$

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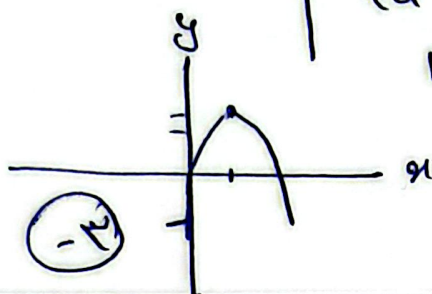
$$y = -x^2 + 4x - 3$$

max

$$\frac{-b}{2a}$$

$$\frac{-4}{-2} = 2$$

(الف)



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(ب)

$$x^2 - 2x + a = 0$$

$$9 - 4a$$

$$x^2 - 2x + a - 2$$

$$0 = (x - a) + 2x - x^2$$

$$a = 1$$

(الف)

$$\frac{9}{4}$$

(ب)

$$a = 10$$

(ج)

$$a \leq \frac{9}{4}$$

(د)

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$$(الف) x^2 - 2x - 1 = 0$$

$$(ب) x^2 - x - 1 = 0$$

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$$(الف) x^2 - 2x - 1 = 0$$

$$11 - 4(21) = 9 \quad \frac{-1 \pm \sqrt{1}}{2} = -1$$

$$\frac{-11 \pm \sqrt{121}}{2} = \frac{-11 \pm 11}{2} = 0$$

$$1 - 4(-1) = 5$$

$$(ب) x^2 + x - 1 = 0$$

$$\frac{b^2 - 4ac \pm \sqrt{b^2 - 4ac}}{2a}$$

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$$(الف) x^2 - 11x + 28 = 0 (x-4)(x-7) \quad x=7, 4$$

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$$(ب) x^2 + 3x - 28 = 0 (x+7)(x-4)$$

$$(الف) 5x^2 - 14x + 7 = 0 (x-1)(x-\frac{7}{5}) \quad 1, \frac{7}{5}$$

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$$(ب) 3x^2 - 10x + 7 = 0 (x-1)(x-\frac{7}{3}) \quad \frac{7}{3}, 1$$

$$(الف) 2x^2 - 5x + 3 = 0 (x-3)(x-2) = 1, \frac{3}{2}$$

$$(ب) 2x^2 + 5x + 3 = 0 (x+3)(x+2) = -\frac{3}{2}, -1$$

$$(ج) 2x^2 - 5x + 1 = 0 \quad \Delta = b^2 - 4ac = 25 - 4(2)(1) = 17$$

$$\frac{5 \pm \sqrt{17}}{4}$$

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$$(د) 4x^2 + 5x + 9 = 0$$

$\Delta < 0$ جواب ندارد

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

$$(الف) 5^2 - 2 \cdot 9 \quad 9 + 4 = 13$$

$$(ب) 5^3 - 3 \cdot 5 \cdot 9 = +29$$

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$$(الف) \binom{7}{5} + \binom{7}{2}$$

$$\frac{7!}{5!} = 21 + \frac{7!}{2!} = 21 + 21 = 42$$

$$(ب) \binom{9}{3} - \binom{8}{2}$$

$$\frac{9!}{3!} - \frac{8!}{2!} = 84 - 28 = 56$$

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