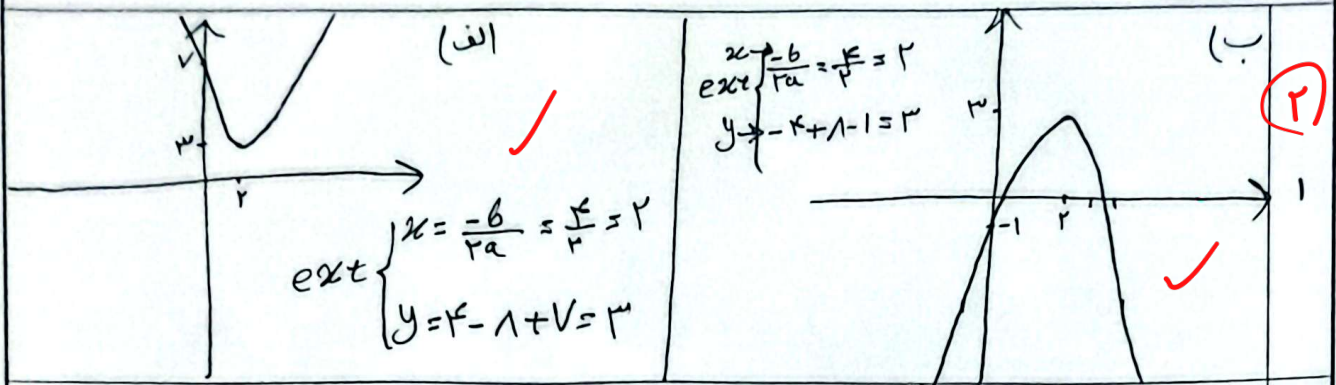


نام و نام خانوادگی ... پاسخنامه تشریحی تکلیف شماره ۲۰ ... کلاس چهارم ...



$\Delta = (m+1)^2 - 4 \times 2 \left(\frac{1}{2}m + 2\right) = m^2 + 2m + 1 - 4m - 16 = m^2 - 2m - 15 = (m-5)(m+3)$

(الف) $\Delta > 0 \leftarrow$ ۲ ریشه متمایز $\Delta < 0 \leftarrow$ ۰ ریشه مضاعف $\Delta = 0 \leftarrow$ ۱ ریشه تکی

(ب) $m < -3$ یا $m > 5$ $\Delta < 0$ $\Delta = 0$ $m = -3$ یا $m = 5$ $\Delta > 0$ $-3 < m < 5$ $\Delta > 0$ $m < -3$ یا $m > 5$ $\Delta < 0$

همیشه مثبت $\Delta = [-2(m+1)]^2 - 4(m-2)(10) = 4m^2 - 32m + 164 \rightarrow$

(الف) $\Delta > 0 \leftarrow$ دایره قطع نمی کند $\Delta < 0 \leftarrow$ دایره قطع می کند $\Delta = 0 \leftarrow$ دایره مماس می شود

$P \rightarrow \frac{10}{m-2} > 0 \Rightarrow m > 2$ ① $S \rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow$ صورت و مخرج مخالف $\Rightarrow$ حالت ① $m+1 > 0, m-2 < 0 \Rightarrow -1 < m < 2$ ②

حالت ② $m+1 < 0, m-2 > 0 \Rightarrow m < -1, m > 2 \rightarrow$ غ ق ق $P = \frac{10}{m-2} < 0 \Rightarrow m-2 < 0 \Rightarrow m < 2$ ③ $S = \frac{2(m+1)}{m-2} < 0 \Rightarrow m+1 > 0, m-2 < 0 \Rightarrow -1 < m < 2$ ④ $\Rightarrow m \in (-1, 2)$ ⑤

(الف) برای اینکه از هر کجایچه عبور کند باید $\Delta > 0$ و ریشه ها مختلف باشند $\frac{c}{a} < 0$

$\frac{10}{m-2} < 0 \Rightarrow m < 2$ ✓

(ب) $\frac{-b}{2a} = -2 \Rightarrow -\frac{1(m+1)}{2(m-2)} = -2 \Rightarrow m+1 = -2(m-2) \Rightarrow 3m = 3 \Rightarrow m = 1$ ✓

$\Delta = (-2\sin a)^2 - 4 \times \frac{2}{9} \times \frac{2}{9} = 4\sin^2 a - \frac{16}{81} = 4(\sin^2 a - \frac{4}{81}) = 4\cos^2 a$

$\Delta > 0 \Rightarrow -4\cos^2 a > 0 \Rightarrow \cos^2 a = 0 \Rightarrow \cos a = 0 \Rightarrow a = \frac{\pi}{2} + k\pi$

$\Rightarrow \sin a = 1 \Rightarrow \frac{2x^2}{3} - 2x + \frac{2}{3} = 0 \xrightarrow{\times 3} 2x^2 - 12x + 2 = 0$

$x = \frac{12 \pm \sqrt{144 - 16}}{4} = \frac{12 \pm 10}{4} = \frac{3}{2}$ ✓

$$x^2 - 2x - 1 = (x+1)(x-1), \quad x^2 - 3x - 5 = (x-5)(x+1)$$

$$y = \frac{(x^2-1)(x+1)(x-5)}{-(x^2-1)} = -4x^2 + 13x + 5$$

$$e_{24} \begin{cases} x = -\frac{b}{2a} = \frac{13}{8} \\ y = \frac{-\Delta}{4a} \Rightarrow \frac{-(149+160)}{-32} = \frac{319}{32} \end{cases}$$

$$y = \frac{-\Delta}{4a} \Rightarrow \frac{-(149+160)}{-32} = \frac{319}{32} \checkmark$$

(2)

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$$\Rightarrow 3S = 5P + V \Rightarrow \frac{3m+4}{m} = \frac{5m-10}{m} \Rightarrow 3m+4 = 5m-10 \Rightarrow 14 = 2m \Rightarrow m=7$$

$$\frac{m=7}{\rightarrow} x^2 - 4x - 7 = 0$$

$$a^2 + b^2 = s^2 - 2p \Rightarrow \left(\frac{p}{r}\right)^2 + 1 = \frac{13}{r} \checkmark$$

(2)

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$$a+b=5, \quad ab=2, \quad b^2=5b-2$$

$$b^2 = B \times B^2 = B(5B-2) = 5B^2 - 2B = 5(5B-2) - 2B = 23B - 10$$

$$B^2 = B \times B^2 = B(23B-10) = 23B^2 - 10B = 23(5B-2) - 10B = 115B - 46 - 10B = 105B - 46$$

$$B^3 = B \times B^2 = B(105B-46) = 105B^2 - 46B = 105(5B-2) - 46B = 525B - 210 - 46B = 479B - 210$$

$$\Delta b^2 = 5(5b-2) = 25b-10 \Rightarrow \frac{a+b}{\Delta b^2} = \frac{5-4b+479b-210}{25b-10} = \frac{474b-205}{25b-10} = \frac{4(474b-205)}{5(5b-2)}$$

$$\frac{4(474b-205)}{5(5b-2)} = 19 \checkmark$$

(2)

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$$y_2 - 3 \Rightarrow x=2 \rightarrow 2(2)+10=14, \quad x=3 \rightarrow 2(-3)+10=4 \Rightarrow (2, 14), (-3, 4)$$

$$ax^2+bx+c=y \xrightarrow{c=4} ax^2+bx+4=y \xrightarrow{x=2} 4a+2b=10 \xrightarrow{x=3} 9a+4b=16$$

$$\Rightarrow 30a=30 \Rightarrow a=1 \rightarrow 4(1)+2b=10 \Rightarrow b=3$$

$$c) \text{ موزن } \rightarrow \frac{-b}{2a} = \frac{-3}{2} \checkmark$$

(2)

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$$\rightarrow f(x)=x \Rightarrow 2x^2+(m+1)x+m+4=x \Rightarrow 2x^2+mx+m+4=0$$

$$\Delta = m^2 - 4(m+4) \rightarrow m = \frac{1 \pm \sqrt{(-1)^2 - 4(1)(-4)}}{2} = \frac{1 \pm \sqrt{17}}{2} \Rightarrow m \rightarrow \frac{1+14}{2} = \frac{15}{2}$$

$$\frac{m=15}{\rightarrow} x = \frac{-b}{2a} = \frac{-m}{2} \Rightarrow \frac{-15}{2} = -7.5 \rightarrow \text{ربع سوس} \rightarrow \text{غوق} \times$$

$$\frac{m=15}{\rightarrow} x = \frac{-b}{2a} = \frac{-m}{2} \Rightarrow \frac{-(-15)}{2} = \frac{15}{2} = 7.5 \rightarrow \text{ربع اول} \rightarrow \text{قوق} \checkmark$$

(2)

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