آتیه زنگنه کیانی

14,75

1) 1,5

$$\frac{-1}{2a-2}=2 \qquad -1=4a-4 \qquad 3=4a \qquad a=\frac{3}{4}$$

$$-\frac{1}{2}x^2+x+3=0 \qquad \Delta=1-4(3)\left(-\frac{1}{2}\right) \qquad 1+6=7$$

$$\frac{-1\mp\sqrt{7}}{-1}=\boxed{\sqrt{7}+1}$$

$\hookrightarrow x=6,\ -2$ ✓ ✗

2)

1

$$mx^2-5x+m$$

$$\Delta>0 \to 25-4(m)(m)>0$$

$$25-4m^2>0$$

$$25>4m^2$$

$$\frac{25}{4}>m^2 \qquad m<\frac{5}{2} \quad I$$

$$m<0 \quad II$$

$$-\tfrac{5}{2}<m<\tfrac{5}{2} \qquad -\tfrac{5}{2}<m<0$$

m_1, m_2: $-\ \ +\ \ -$

$$I\cap II = m<0$$

3) 1,25

$$P=\frac{9-5}{9} \qquad \frac{4}{9}$$

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

$$ax^2+bx+\cancel{c}=0$$

$$y=\cancel{9x^2-4x+27} \qquad 9x^2-18x+4$$

4) 3

$$\alpha+\beta=4 \qquad \alpha\cdot\beta=\frac{m+2}{2} \qquad m=$$

$$\beta=4-\alpha \qquad \alpha^2+\beta^2+2\alpha^2=12 \qquad 3=\frac{m+2}{2} \Rightarrow \boxed{m=4}$$

$$3\alpha^2+16+\alpha^2-8\alpha \to 4\alpha^2-8\alpha+4=0 \to \alpha^2-8\alpha+16=0$$

$$(\alpha-4)(\alpha-4) \to \alpha=1$$

$$\beta=3 \qquad \alpha\cdot\beta=3$$

5) 1,75

$$\frac{-b}{2a}=2 \qquad c=5$$

$$4a+2b+5=9$$

$$4a-8a=$$

$$-4a=4$$

$$a=-1$$

$$\Rightarrow b=4$$

(2,9)

$$ax^2+bx+\cancel{c}=y$$

$$-b=4a$$

$$b=-4a$$

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

$$-(x^2-4x-5)$$

$$(x+5)(x-1)$$

-1, 5: $-\ \ +\ \ -$

$$(-1,5)$$

Scanned with CamScanner

$ax^2 - 7x + 9\beta = 0$ $\beta > 0$ (۴

$\frac{S}{\alpha\cdot\beta}$ $\frac{S}{(\beta)\,9\beta}$

$\alpha\cdot\beta = \frac{9\beta}{\alpha}$

$\alpha + \beta = \frac{7}{\alpha}$

$\alpha^2 = 9$

$\alpha = 3$

$\boxed{\alpha = -3}$

$-3 + \beta = \frac{7}{-3}$

$9 - 3\beta = 7$

$2 = 3\beta \to \beta = \frac{2}{3}$

۲

$3 + \beta = \frac{7}{3}$

$9 + 3\beta = 7$

$\beta = \frac{-2}{3}$ ✗

$\to \frac{S}{\alpha\cdot\beta} = \frac{\frac{2}{3} - 3}{\alpha\cdot\beta} = \frac{\frac{-7}{3}}{\frac{-2}{1}} = \frac{7}{6}$

$\frac{2}{3} \times -3 = -2$

(۷

۵

$x^2 + mx - 2m = 0$

$-m = ?$

$\alpha^2 - m\beta = 8$

$-m\alpha + 2m - m\beta = 8$

$-m(\underbrace{\alpha+\beta}_{-m}) + 2m = 8$

۲

$\cancel{m^2 - 2m + 8 = 0}$

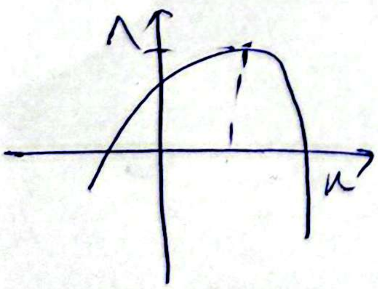
$+m^2 + 2m - 8 = 0$

$(m+4)(m-2)$ $\to m = 2$, $m = -4$

$m^2 + 2m + 8 = 0$

$\Delta < 0$ ✗ غ ق ق

$m = 2 \to S = -2$



$f(x) = mx^2 + 4x + \frac{m}{2} + 7$ (۸

$\frac{-\Delta}{4a} = 8$

$\Rightarrow \frac{-16 + \overbrace{4(\frac{m}{2}+7)(m)}^{2m^2 + 28m}}{4m}$

$\frac{-16 + 2m^2 + 28m}{4m} = 8$

۲

$\cancel{-32m}$ $2m^2 - 4m - 16 = 0 \to m^2 - 2m - 8 = 0$

$(m-4)(m+2) = 0$ $\to m = 4$, $\boxed{m = ...}$

$\to -2m^2 + 4m + 16 = 0$

$2m^2 - 4m - 6 = 0 \longrightarrow n = 3$

$m^2 - 4m - 12 = 0$

$(m - \frac{6}{2})(2m + 2) = 0$

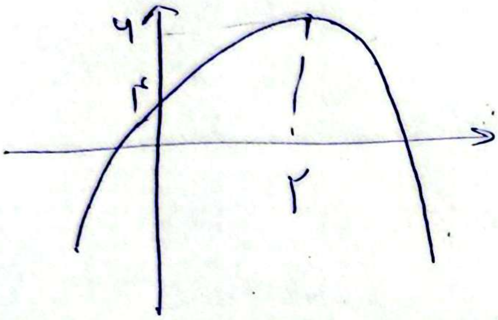
$(m - 3)(2m + 2) = 0$

$\boxed{m = 3}$

9)

$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{S^{4}}{P_{-8}} = \frac{-1}{2}$

5



$ax^2 + bx + c = y$

$\frac{-b}{2a} = 2 \qquad -\frac{1}{2}x^2 + 2x + 4 = y$

$-b = 4a \qquad S = \frac{-2}{-\frac{1}{2}} = 4$

$b = -4a$

$4a + 2b + c = 6$

$4a - 8a + 4 = 6 \qquad \boxed{a = -\frac{1}{2}} \qquad b = -4 \times -\frac{1}{2} = 2$

$-2 = 4a$

$P = \frac{4}{-\frac{1}{2}} = -8$

10)

$x^2 - (4a + 4)x + (3a^2 + 6a + 3) = 0$

1,25

$4 \cancel{- 8a} - 8 + 3a^2 \cancel{+ 6a} + 3 = 0$

$3a^2 - 2a + \cancel{5} -1 = 0 \qquad \cancel{x^2 - 12x + 27 = 0}$

$\cancel{(x - 9)(x - 3)}$

$a^2 - 2a \cancel{-15} -3 = 0$

$\cancel{(a - 3)(a + 1) = 0} \to a = 3$

$\to \cancel{a = -1 \times \quad \Delta = 0}$

$\cancel{3 \times 4^2 + 8 \times 4 + 3 \quad 27}$

8×6

$x^2 \cancel{- 16x + 48 = 0}$

$\cancel{3 \times 9 + 6 \times 3 + 3}$

$\cancel{(x - 12)(x - 4)}$

$\boxed{x = 6}$

$27 + 18 + 3 = 48$

$x^2 - 8x + 12 = 0$

$(x - 2)(x - 6)$

$4 - 8a - 8 + 3a^2 + 6a + 3 = 0 \qquad a^2 - 2a - 3 = 0 \to a = 1$

$3a^2 - 2a - 1 = 0 \qquad (a - \frac{3}{3})(3a + 1) \to a = -\frac{1}{3}$

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

Scanned with CamScanner