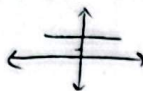
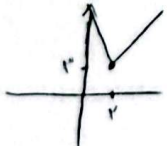


|                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                 |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| $y^3 - x = 2x^2$<br>$x=1 \quad y^3 - 1 = 2$<br>$y^3 = 3 \quad y = \sqrt[3]{3}$ $x = \text{تبع}$<br>$(4) + x^2 = x + 3$<br>$x=0 \quad  y =3 \quad y = \pm 3$ $x = \text{تبع}$                        | $\sqrt{x-4} +  y+2  = 0$<br>$x-4 \geq 0 \quad x=4$ $y+2 \geq 0 \quad y=-2$<br>$x=4, y=-2$ $x = \text{تبع}$<br>$x = \cos y$<br>$x=0 \quad y = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$ $x = \text{تبع}$                                                             | ۱ |
| <p>الف) <math>y=2</math></p>                                                                                       | <p>ب) <math>y-2 = 2(x-1)</math></p> $y=2x$<br>                                                                                                                                | ۲ |
| <p>الف) <math>x=y \quad f(x)=x \quad y=ax+b</math><br/> <math>x=ax+b</math><br/> <math>a=1</math><br/> <math>b=0</math><br/> <math>a+2b = 1+2 \times 0 = 1^*</math></p>                             | <p>ب) <math>y=x^2+ax+b</math><br/> <math>x_v = \frac{-a}{2}</math><br/> <math>\frac{-a}{2} = 2 \quad a = -4</math><br/> <math>1 = 2^2 + (-4)(2) + b</math><br/> <math>1 = 4 - 8 + b</math><br/> <math>b = 5 \Rightarrow a+2b = -4 + 2 \times 5 = 6^*</math></p> | ۳ |
| $y=2x+1$<br><br>$y=-3x+1$<br> | $y=x^4$<br><br>$y=x^5$<br>                                                              | ۴ |
| <p>الف) <math>y= x-2 +3</math></p>                                                                               | <p>ب) <math>- x+3 +1</math></p>                                                                                                                                             | ۵ |

$$\frac{x+f}{x^2-fx}$$

$$x(x-f)=0 \Rightarrow \begin{cases} x=f \\ x=0 \end{cases} \quad D_f = R - \{0, f\}$$

$$\frac{x+f}{x^2-5x+4}$$

$$\Delta = -15 < 0 \Rightarrow \text{no real roots} \Rightarrow D_f = R$$

$$\frac{x+f}{x^2+x+f}$$

$$\Delta = -15 < 0 \Rightarrow \text{no real roots} \Rightarrow D_f = R$$

$$\frac{x+f}{x^2-fx}$$

$$x^2(x^2-f)=0 \Rightarrow \begin{cases} x=0 \\ x=f \end{cases} \quad D_f = R - \{0, f\}$$

$$y = \sqrt{4-x} + \sqrt{x-2}$$

$$4-x \geq 0 \Rightarrow x \leq 4$$

$$x-2 \geq 0 \Rightarrow x \geq 2$$

$$D_f = [2, 4]$$

$$y = \frac{3x+1}{x^2+1} > 0 \quad D_f = R$$

مقامات بحرانی را پیدا می‌کنیم

$$\frac{\sqrt{x-2}}{x-f}$$

$$x-2 \geq 0 \Rightarrow x \geq 2$$

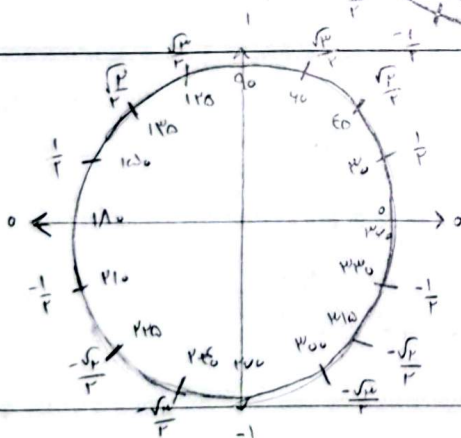
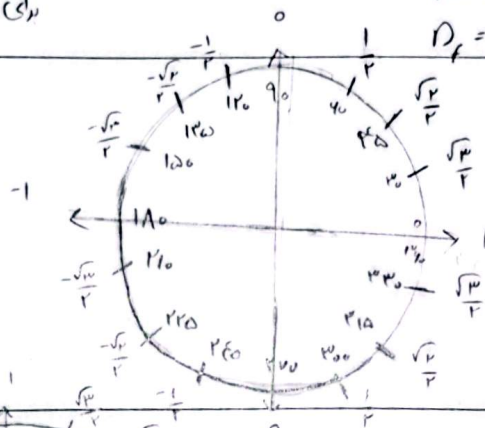
$$x-f \neq 0 \Rightarrow x \neq f$$

$$D_f = [2, f) \cup (f, +\infty)$$

$$\frac{3x+1}{1x^2+x^2}$$

$$1x^2+x^2 \neq 0 \Rightarrow x \neq 0$$

$$D_f = R - \{0\}$$



$$(-\frac{1}{f}) \Rightarrow +\frac{1}{f} \quad \text{مثلاً } 150^\circ \rightarrow \frac{\pi}{4} \text{ و } \frac{3\pi}{4} \quad \text{الف)}$$

$$-\frac{\sqrt{3}}{f} \Rightarrow 150^\circ, 210^\circ \quad \frac{\pi}{3} \text{ و } \frac{2\pi}{3} \quad \text{ب)}$$