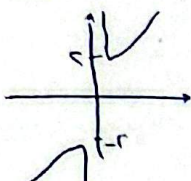
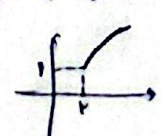
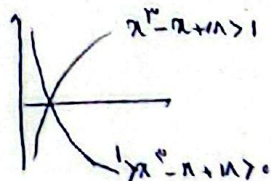


نام و نام خانوادگی: (امیرحسین) (خانی) ... پاسخنامه تشریحی تکلیف شماره ۵ ... کلاس: دوازدهم ... دبیر: A

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(ب) <math>y = \frac{x^2+1}{ x } =  x  + \frac{1}{ x }</math></p> <p>ی متناهی نشود <math> x  \rightarrow</math></p> <p><math>R_f = ]R - (-c, c)]</math></p>                                                                                                                                                                                                                                        | <p>(الف) <math>y = \frac{ x +1}{ x -2}</math></p> <p><math>\begin{cases} \max &amp; 1 \\ +\infty \\ \min &amp; -\frac{1}{2} \end{cases}</math></p> <p><math>R_f = [-\frac{1}{2}, 1)</math></p>                                 |
| <p><math>y = \frac{x^2+cx-c}{x+c} \rightarrow yx+cy = x^2+cx-c \rightarrow x^2+(c-y)x-cy-c=0</math></p> <p><math>x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{(y-c) \pm \sqrt{y^2-2cy+c^2-2c(y-c)}}{2} = \frac{y-c \pm \sqrt{y^2+1y+1c}}{2}</math></p> <p><math>y^2+1y+1c \geq 0 \rightarrow (y+c)(y+1) \geq 0 \rightarrow \frac{-y}{+} \frac{-c}{-} \rightarrow</math></p> <p><math>R_f = ]R - (-c, -c)]</math></p>                                                         | <p>۲</p>                                                                                                                                                                                                                       |
| <p><math>f(x) = \frac{x^2-x+\frac{1}{2}}{x^2-x+1} \rightarrow \Delta &lt; 0</math></p> <p><math>yx^2-yx+y = x^2-x+\frac{1}{2} \rightarrow (y-1)x^2+(1-y)x+y-\frac{1}{2}=0</math></p> <p><math>\frac{y-1}{+} \frac{1}{-} \frac{1}{+}</math></p> <p><math>\frac{y-1 \pm \sqrt{(1-y)^2-2(y-1)(y-\frac{1}{2})}}{2y-1} = \frac{y-1 \pm \sqrt{(y-1)(2y-c)}}{2y-1}</math></p> <p><math>2y-1 \neq 0 \rightarrow y \neq \frac{1}{2}</math></p> <p><math>R_f = ]R - (\frac{1}{2}, 1)</math></p> | <p>۳</p>                                                                                                                                                                                                                       |
| <p>(ب) <math>y = \sqrt[3]{cx^2-1x}</math></p> <p><math>x_0 = \frac{-b}{2a} = \frac{1}{2} = c \rightarrow y_0 = \sqrt[3]{1-1} = 0</math></p> <p><math>R_f = [-c, +\infty)</math></p>                                                                                                                                                                                                                                                                                                   | <p>(الف) <math>y = \sqrt{-x^2+2x-1}</math></p> <p><math>\frac{-b}{2a} = \frac{-2}{-2} = 1 \rightarrow y_0 = \sqrt{-1+2-1} = 0</math></p> <p><math>R_f = [0, \sqrt{3}]</math></p>                                               |
| <p>(ب) <math>y = \log_r(\frac{x^2+1}{x})</math></p> <p><math>\frac{x^2+1}{x} = x + \frac{1}{x} \rightarrow R = ]R - (-c, c)</math></p> <p><math>R_f = [1, +\infty)</math></p>                                                                                                                                                                                                                      | <p>(الف) <math>y = \log(x^2-x+1)</math></p> <p><math>D_f = ]R</math></p> <p><math>R_f = ]R</math></p> <p><math>x^2-x+1 &gt; 0</math></p>  |

|                         |                           |
|-------------------------|---------------------------|
| $y =  x-1  +  x+1 $ (ب) | $y =  x-1  -  x-1 $ (الف) |
|                         |                           |
| $R_f = [-1, +\infty)$   | $R_f = [-1, +\infty)$     |

|                                                                    |                                                                            |
|--------------------------------------------------------------------|----------------------------------------------------------------------------|
| $ x-1  -  x+1  \leq 1$                                             | $ x-1  -  x+1  \leq 1$                                                     |
|                                                                    |                                                                            |
| $(-1, 1) \rightarrow -x+1 - (x+1) = -2x = 1$<br>$x = -\frac{1}{2}$ | $(-\infty, -1) \rightarrow -x+1 - (-x-1) = 2x+2 = 1$<br>$x = -\frac{1}{2}$ |
| $R_f = (-\infty, -\frac{1}{2}] \cup [\frac{1}{2}, +\infty)$        | $R_f = (-\infty, -\frac{1}{2}] \cup [\frac{1}{2}, +\infty)$                |

|                        |                                                                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $y = 3x -  x+1  +  x $ | $x < -\frac{1}{2} \rightarrow 3x - (-x-1) + (-x) = 2x+1$<br>$-\frac{1}{2} \leq x < 0 \rightarrow 3x - x-1 + (-x) = -x-1$<br>$x \geq 0 \rightarrow 3x - x-1 + x = 2x-1$ |
|                        | $R_f = \mathbb{R}$                                                                                                                                                     |

|                    |                            |
|--------------------|----------------------------|
| $y = 3x - [x]$ (ب) | $y = [x] + [-x] + 3$ (الف) |
|                    |                            |
| $R_f = [-1, 0)$    | $R_f = \{3, 4\}$           |

|                               |                               |
|-------------------------------|-------------------------------|
| $y = \sin^2 x + \sin^2 x + 1$ | $y = \sin^2 x - \sin^2 x + 1$ |
|                               |                               |
| $R_f = [1, 3]$                | $R_f = [\frac{1}{2}, 3]$      |