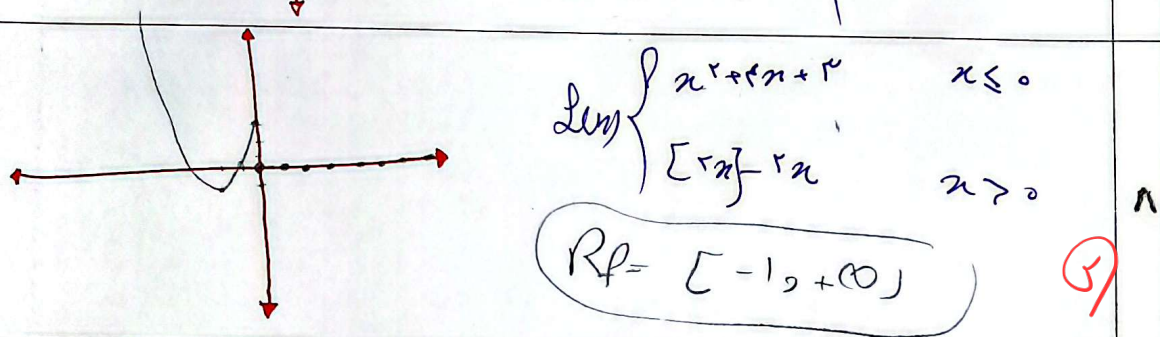
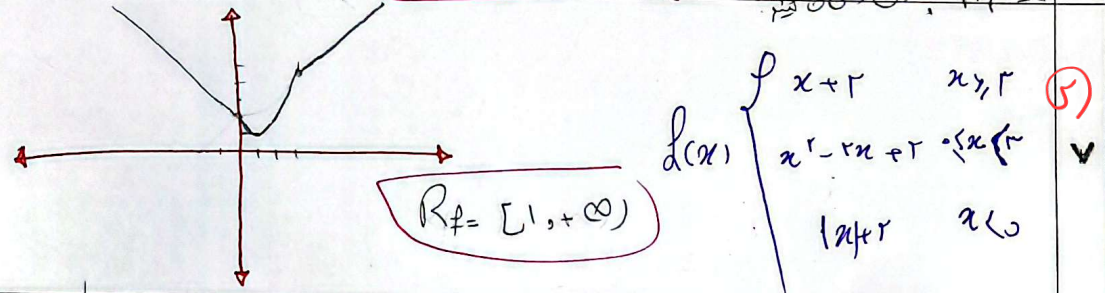


| <p>باسم الله تعالى<br/>باسم الله تعالى<br/>باسم الله تعالى</p>                                                                                                                                                                                                                                                 | <p>نام و نام خانوادگی<br/>نام و نام خانوادگی<br/>نام و نام خانوادگی</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <p> <math>f(x) = \sqrt{1-x^2}</math> <math>1-x^2 \geq 0 \Rightarrow x^2 \leq 1 \Rightarrow -1 \leq x \leq 1</math><br/> <math>g = \{(1, 1), (0, 1), (1, 2)\}</math> <math>Dg = \{1, 2\}</math><br/> <math>2g - 3f \Rightarrow (-1, 2), (0, 5), (1, 4)</math><br/> <math>\Rightarrow 2+5+4=11</math> </p>       | <p>١</p>                                                                |
| <p> <math>f(x) = 2x-1 \rightarrow R_f = [5, +\infty)</math><br/> <math>g(x) = \frac{1}{2}x+3 \rightarrow R_g = (-\infty, 4]</math><br/> <math>R_f \cup R_g = \mathbb{R} - (4, 5)</math> </p>                                                                                                                   | <p>٢</p>                                                                |
| <p> <math>y = -\frac{x^2}{2} + x + 3</math><br/> <math>x^2 - 2x - 6 &lt; 0</math><br/> <math>(x-3)(x+2)</math><br/> <math>\begin{matrix} + &amp; - &amp; + \\ -1 &amp; 3 &amp; \end{matrix}</math> </p>                                                                                                        | <p>٣</p>                                                                |
| <p> <math>y =  x-1  +  x-3  +  2x-4 </math><br/> <math>1-x+3-x+4-2x</math><br/> <math>-x+3</math><br/> <math>1-x+3-x-2x+6</math><br/> <math>-2x+9</math><br/> <math>x-1+3-x+2x-4</math><br/> <math>2x-2</math><br/> <math>x-1+x-3+2x-4</math><br/> <math>4x-8</math><br/> <math>R_f = [2, +\infty)</math> </p> | <p>٤</p>                                                                |
| <p> <math>y =  x-2 /x+1</math><br/> <math>-x+2x+1</math><br/> <math>x+2</math><br/> <math>-x-2x-2</math><br/> <math>-3x-2</math><br/> <math>x-2x-2</math><br/> <math>-x-2</math><br/> <math>R_f = (-\infty, 2]</math> </p>                                                                                     | <p>٥</p>                                                                |

$y = \frac{x^2 + 5x + m}{x+1} \Rightarrow y(x+y) = x^2 + 5x + m$   
 $x^2 + (5-y)x + (m-y) = 0 \sim x = \frac{y-5 \pm \sqrt{25+y^2-10y+4y-4m}}{2}$   
 $y^2 - 4y + 25 - 4m \geq 0 \Rightarrow \Delta' \leq 0 \Rightarrow 34 - 100 + 16m \leq 0$   
 $16m \leq 66 \Rightarrow m \leq \frac{33}{8}$   
 $m = \{1, 2, 3\}$

اگر  $m$  بزرگتر یا  
 صغیر ساده شود  
 با  $x$  عبارت را حل می کند



$y = a+1 - \sqrt{2x+3}$   
 $x = -\frac{3}{2} \sim a+1 = 0 \Rightarrow a = -1$   
 $b = -\frac{3}{2}$   
 $ab = -\frac{9}{2}$

$f(x) = 2\sqrt{x+1} + \sqrt{1-x} \sim \begin{cases} x \leq 1 \\ x \geq -1 \end{cases} \Rightarrow -1 \leq x \leq 1$   
 $f(x) + g(x) = 2\sqrt{2} + \sqrt{1-x}$   
 $D_f = D_g$   
 $f(0) = 2$   
 $f(1) = \sqrt{2}$   
 $f(-1) = 4\sqrt{2}$   
 $g(0) = 0$   
 $g(1) = \sqrt{2}$   
 $g(-1) = -\sqrt{2}$

$y = \frac{f(x) - 2g(x)}{4}$   
 $\max \rightarrow \frac{4\sqrt{2} + 2\sqrt{2}}{4} = \sqrt{2}$   
 $\min \rightarrow \frac{4\sqrt{2} - 2\sqrt{2}}{4} = \frac{\sqrt{2}}{2}$   
 $R_f = [\frac{\sqrt{2}}{2}, \sqrt{2}]$