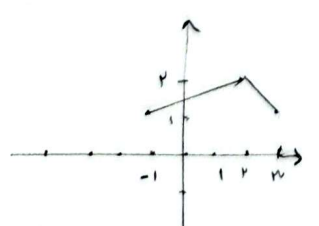
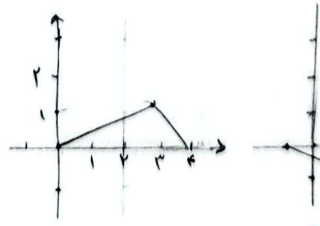
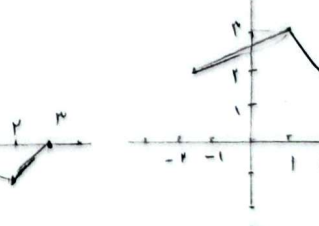
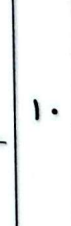


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| <p>نام و نام خانوادگی: ..... پروردگار ..... پاسخنامه تشریحی تکلیف شماره ۴... کلاس ۴... دهم ۱۶:۳۰ - ۱۱:۳۰</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| <p>الف) <math>4n^2 - 2n^2 + 31n - 15 \neq 0 \rightarrow (n-1)(4n^2 - 16n + 15) = 0 \xrightarrow{\text{ریشه ها}} \left[ \frac{1}{4}, \frac{5}{4} \right]</math></p> <p>ب) <math>D = R - \left\{ 1, \frac{3}{4}, \frac{5}{4} \right\}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ۱ |
| <p>الف) <math>3n^2 - n^2 - 8n - 4 \neq 0 \rightarrow (n+1)(2n^2 - 4n - 4) = 0 \xrightarrow{\text{ریشه ها}} \left[ \frac{1}{2}, \frac{3}{2} \right]</math></p> <p>ب) <math>D = R - \left\{ 1, \frac{3}{2}, \frac{5}{2} \right\}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ۲ |
| <p>الف) <math>3 - 2n \geq 0 \Rightarrow n \leq \frac{3}{2}</math> ① <math>n - \sqrt{3-2n} = 0 \Rightarrow n^2 - 3 + 2n = 0</math></p> <p>ب) <math>n \neq 1, -3</math> ② <math>1, 2 \Rightarrow D = (-\infty, \frac{3}{2}] - \{1, -3\}</math> <math>x = -3, y = \frac{-2}{-4}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ۳ |
| <p>الف) <math>2 \cos n - 1 \neq 0 \Rightarrow \cos n \neq \frac{1}{2} \Rightarrow n \neq 2k\pi \pm \frac{\pi}{3}</math> <math>D = R - \left\{ 2k\pi \pm \frac{\pi}{3} \right\}</math></p> <p>ب) <math>2 \sin n + 1 \neq 0 \Rightarrow \sin n \neq -\frac{1}{2} \Rightarrow D = R - \left\{ 2k\pi + \frac{7\pi}{6}, 2k\pi - \frac{\pi}{6} \right\}</math></p> <p>ج) <math>\sin n \neq 0 \Rightarrow \cos n \neq 0 \Rightarrow n \neq \frac{k\pi}{2} \Rightarrow \cot n \neq 1 \Rightarrow n \neq k\pi + \frac{\pi}{4} \Rightarrow 1, 2, 3 \Rightarrow</math></p> <p>د) <math>D = R - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{4} \right\}</math></p> <p>ه) <math>2 \sin^2 n - 3 \neq 0 \Rightarrow \sin n \neq \pm \frac{\sqrt{3}}{2} \Rightarrow D = R - \left\{ k\pi \pm \frac{\pi}{3} \right\}</math></p> | ۴ |
| <p>الف) <math>\frac{n}{1} \mid \frac{1}{+} \frac{5}{-} \frac{5}{+}</math> ① <math>(1, 5)</math></p> <p>ب) <math>\frac{n}{1} \mid \frac{1}{+} \frac{6}{-} \frac{6}{+}</math> ② <math>[1, 6]</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ۵ |
| <p>الف) <math>\frac{n}{1} \mid \frac{1}{-} \frac{2}{+} \frac{5}{-} \frac{5}{+}</math> ① <math>(-\infty, 1) \cup (2, 5)</math></p> <p>ب) <math>\frac{n}{1} \mid \frac{-1}{+} \frac{5}{-} \frac{5}{+}</math> ② <math>(-\infty, -1] \cup (5, \infty)</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ۶ |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |    |   |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|---|---|-----------|---|---|---|-----------|---|---|---|--------|---|---|---|----------|
| <p>الف) <math>\frac{x^2 - 4x + 3}{x^2 - 1} \geq 0</math> ریشه صورت ۱ و ۳ ریشه مخرج ۱ و ۳</p> $D = [3, \infty)$ <p>ب) <math>x^2 - 1 \neq 0 \quad x \neq 1, -1 \quad D = R - \{1, -1\}</math></p>                                                                                                                                                                                                                                                                                                                                                                           | <p>۶</p>  |    |   |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| <p>الف) <math>x^2 - 3x &gt; 0</math> ریشه ۰ و ۳ <math>\frac{x}{+ \quad - \quad +}</math> <math>(-\infty, 0) \cup (3, \infty)</math></p> <p>ب) <math>16 - x^2 &gt; 0 \quad  x  - 2 &gt; 0 \quad  x  - 2 \neq 1 \quad D = [2, 4] - \{2\} \cup [-2, -4] - \{-2\}</math></p> <p>ج) <math>\frac{x^2 - 4x + 12}{x - 3} &gt; 0 \quad 10 - x &gt; 0 \quad 10 - x \neq 1 \quad D = (-\infty, 3) \cup (4, 10) - \{9\}</math></p> <p>د) <math>x^2 - 11x + 28 \geq 0 \quad 36 - x^2 &gt; 0 \quad x \neq 1 \quad x &gt; 0</math></p> <p><del><math>D = [0, 6] - \{1\}</math></del></p> | <p>۷</p>  |    |   |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| <p>دانش سریع:</p> <p>۱- ریشه صورت ۰ و ۰ ریشه مخرج ۱ و ۱</p> <table border="1"> <tr> <td><math>x</math></td> <td>-1</td> <td>0</td> <td>1</td> </tr> <tr> <td><math>x^2 - x</math></td> <td>+</td> <td>+</td> <td>-</td> </tr> <tr> <td><math>x^2 + x</math></td> <td>+</td> <td>-</td> <td>+</td> </tr> <tr> <td><math>f(x)</math></td> <td>+</td> <td>-</td> <td>+</td> </tr> </table>                                                                                                                                                                                   | $x$       | -1 | 0 | 1 | $x^2 - x$ | + | + | - | $x^2 + x$ | + | - | + | $f(x)$ | + | - | + | <p>۸</p> |
| $x$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -1        | 0  | 1 |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| $x^2 - x$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | +         | +  | - |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| $x^2 + x$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | +         | -  | + |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| $f(x)$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | +         | -  | + |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| <p>الف) <math>\frac{x}{- \quad + \quad - \quad +}</math> ریشه مخرج ۲ و -۲</p> <p><math>f(x) \neq 0 \quad x - f(x) = 0 \quad x = f(x) \quad x = -1, 3</math></p> <p><math>D = [-2, -1] \cup (2, 3]</math></p> <p>ب) <math>\frac{x - f(x)}{f(x)} &gt; 0</math></p>                                                                                                                                                                                                                                                                                                          | <p>۹</p>  |    |   |   |           |   |   |   |           |   |   |   |        |   |   |   |          |
| <p>الف) </p> <p>ب) </p> <p>ج) </p> <p>د) </p>                                                                                                                                                                              | <p>۱۰</p> |    |   |   |           |   |   |   |           |   |   |   |        |   |   |   |          |