

نام و نام خانوادگی: (.....) پاسخنامه تشریحی تکلیف شماره ..... کلاس: ..... ریاضی: ..... ۱۳۹۸/۹۸

الف)  $x^2 - 4x + 8 = 0 \Rightarrow x^2 - 4x + 9 = 1 \Rightarrow (x-2)^2 = 1 \rightarrow \sqrt{(x-2)^2} = \sqrt{1}$   
 $|x-2| = 1 \rightarrow x-2 = \pm 1 \rightarrow \begin{cases} x=3 \\ x=1 \end{cases}$

ب)  $x^2 + 11x + 17 = 0 \rightarrow x^2 + 11x + 14 = -9 \rightarrow (x+5)^2 = 9 \rightarrow \sqrt{(x+5)^2} = \sqrt{9}$   
 $|x+5| = 3 \rightarrow x+5 = \pm 3 \rightarrow \begin{cases} x=-2 \\ x=-8 \end{cases}$

الف)  $x^2 - 5x + 6 = 0 \rightarrow (x-2)(x-3) = 0 \rightarrow \begin{cases} x-2=0 \rightarrow x=2 \\ x-3=0 \rightarrow x=3 \end{cases}$

ب)  $x^2 - 5x - 14 = 0 \rightarrow (x+2)(x-7) = 0$   
 $\begin{cases} x+2=0 \rightarrow x=-2 \\ x-7=0 \rightarrow x=7 \end{cases}$

الف)  $x^2 - 3x - 5 = 0 \rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{3 \pm \sqrt{9+20}}{2} = \frac{3 \pm \sqrt{29}}{2}$

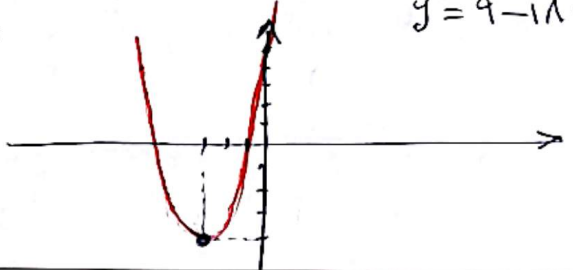
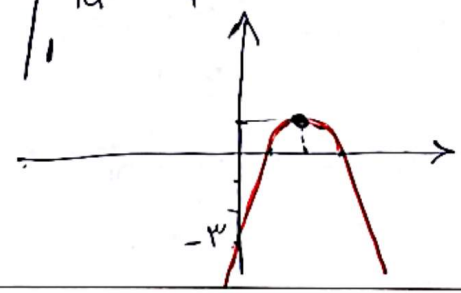
ب)  $2x^2 - 4x + \frac{1}{2} = 0 \rightarrow x = \frac{4 \pm \sqrt{16-2}}{4} = \frac{4 \pm \sqrt{14}}{4} = \frac{2 \pm \sqrt{14}}{2}$   
 $\begin{cases} 2+\sqrt{14} \\ 2-\sqrt{14} \end{cases}$

الف)  $x^2 - 3x + 2 = 0 \rightarrow (x-1)(x-2) = 0 \rightarrow \begin{cases} x-1=0 \rightarrow x=1 \\ x-2=0 \rightarrow x=2 \end{cases}$

ب)  $4x^2 + x - 3 = 0 \rightarrow x = \frac{-1 \pm \sqrt{1+48}}{8} = \frac{-1 \pm 7}{8} \rightarrow \begin{cases} x=1 \\ x=-1 \end{cases}$

الف)  $5x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + 35 = 0 \rightarrow (x-5)(x-7) = 0$   
 $\begin{cases} x=5 \\ x=7 \end{cases}$

ب)  $3x^2 - 10x + 7 = 0 \rightarrow x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) = 0$   
 $\begin{cases} x=3 \\ x=7 \end{cases}$

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| <p>الف) <math>\Delta = b^2 - 4ac \rightarrow \Delta = 25 - 12 = 13 \rightarrow</math> ۲ ریشه متمایز</p> <p>ب) <math>\Delta = 1 - 14 = -13 &lt; 0 \rightarrow</math> ریشه ندارد</p> <p>ج) <math>\Delta = 14 - 14 = 0 \rightarrow</math> یک ریشه مضاعف دارد</p> <p>د) <math>\Delta = 1 - 18 = -17 &lt; 0 \rightarrow</math> x معادله ریشه ندارد</p>                                                                                                                                      | ۶  |
| <p>الف) <math>\Delta &gt; 0 \rightarrow b^2 - 4ac &gt; 0 \rightarrow 9 - 18a &gt; 0 \rightarrow 9 &gt; 18a \rightarrow \frac{9}{18} &gt; a</math></p> <p>ب) <math>\Delta = 0 \rightarrow b^2 - 4ac = 0 \rightarrow 9 - 18a = 0 \rightarrow 9 = 18a \rightarrow a = \frac{9}{18}</math></p> <p>ج) <math>\Delta &lt; 0 \rightarrow 9 - 18a &lt; 0 \rightarrow 9 &lt; 18a \rightarrow \frac{9}{18} &lt; a</math></p> <p>د) <math>\Delta &gt; 0 \rightarrow \frac{9}{18} &gt; a</math></p> | ۷  |
| <p>الف) <math>\min \left  \frac{-b}{2a} = \frac{-4}{2} = -2 \right </math>      <math>y = x^2 + 4x + 5</math><br/> <math>y = 9 - 18 + 5 = -4</math></p> <p>ب) </p>                                                                                                                                                                                                                                  | ۸  |
| <p>الف) <math>\max \left  \frac{-b}{2a} = \frac{-4}{-2} = 2 \right </math>      <math>y = -x^2 + 4x - 3</math><br/> <math>y = -4 + 16 - 3 = 9</math></p> <p>ب) <math>y = 0 \rightarrow -x^2 + 4x - 3 = 0</math><br/> <math>\begin{cases} x = 1 \\ x = \frac{c}{a} = 3 \end{cases}</math></p> <p></p>                                                                                                | ۹  |
| <p><math>x^2 - 3x - 2 = 0</math>      <math>S = \frac{-b}{a} = 3</math> ,      <math>P = \frac{c}{a} = -2</math></p> <p>الف) <math>S^2 - 2P = 9 + 4 = 13</math></p> <p>ب) <math>S^3 - 3SP = 27 + 12 = 39</math></p>                                                                                                                                                                                                                                                                    | ۱۰ |