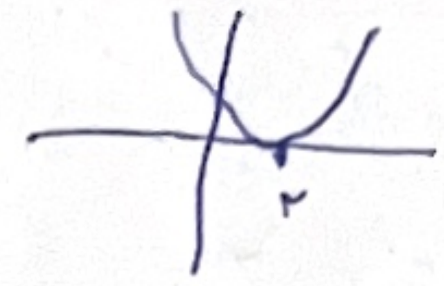
تکلیف شماره ۲۰

کلاس دوازدهم سه A

دریا براقی

۱- $x^2+ax+b=0^+ \Rightarrow (x-2)^2 = x^2-4x+4$
$\Rightarrow a=-4 \quad b=4 \quad \Rightarrow a+b=0$



۲- $(x-\sqrt[3]{4})^2 = x^2 - 2\sqrt[3]{4}\,x + \sqrt[3]{16} \Rightarrow a=-2\sqrt[3]{4}\ ,\ b=2\sqrt[3]{2}$

$$\left[\frac{2\sqrt[3]{2}}{-2\sqrt[3]{4}}\right] = \left[-\frac{2^{\frac13}}{2^{\frac23}}\right] = \left[-2^{-\frac13}\right] = \left[-\sqrt[3]{\frac12}\right] = -1$$

۳- $\dfrac{-1+a}{\left|\frac13^+ + a\right| + a} = -\infty \Rightarrow a \geq -\frac13 \Rightarrow \dfrac{a-1}{\frac13^+ + 2a} = -\infty \Rightarrow a = -\frac16$

$\Rightarrow [a] = -1$

۴- $x > -\frac12 \Rightarrow 16x > -8\ ,\ 24x > -12\ ,\ -\frac{2}{x^2} < -8\ ,\ \frac{3}{x^2} > 12$

$\Rightarrow \dfrac{-8+9}{-12^+ + 12} = \dfrac{1}{0^+} = +\infty$

۵- $\lim\limits_{x\to 2} \left(\dfrac{(x-2)(x+2)}{x^3-8}\right) = \lim\limits_{x\to 2} \dfrac{\cancel{(x-2)}(x+2)}{\cancel{(x-2)}(x^2+4+2x)} = \dfrac{4}{12} = \dfrac13$

۶- $\dfrac{(x+8)(x+2)}{6(2-\sqrt[3]{x})} \times \dfrac{\text{فیل}}{\text{فیل}} = \dfrac{\cancel{(x+8)}(x+2)(\text{فیل})}{6\cancel{(8+x)}} = -12$

۷- $\lim\limits_{x\to 0^-} \dfrac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} \times \dfrac{\text{مزدوج ص}}{\text{مزدوج ص}} = \dfrac{4x}{\sqrt{1-(1-\frac{x^2}{2})} \times \text{مزدوج}\ 2\sqrt2} = \dfrac{4x}{\frac{|x|}{\sqrt2} \times 2\sqrt2} = \dfrac{2x}{-x} = -2$

مزدوج ص

$\dfrac{\sqrt{2+3x}+\sqrt{2-x}}{2\sqrt2}$

۸-

$$\lim_{x\to 0}\frac{k+1-\frac{ax^2}{2}}{kx^2}=3 \xRightarrow{\frac{0}{0}} k=-1 \Rightarrow \frac{-\frac{ax^2}{2}}{-x^2}=3 \Rightarrow a=6$$

$$\frac{6}{-1}=\frac{a}{k}=-6$$

۹-

$$\lim_{x\to 3a}\left(\frac{2\sqrt{x-3a}}{\sqrt{x-3a}\times\sqrt{x+3a}}+\frac{3(\sqrt{x}-\sqrt{3a})}{\sqrt{x^2-9a^2}}\times\frac{\sqrt{x}+\sqrt{3a}}{\sqrt{x}+\sqrt{3a}}\right)=\lim_{x\to 3a}\left(\frac{2}{\sqrt{x+3a}}+\frac{3(x-3a)}{\sqrt{x-3a}\times\sqrt{x+3a}\,(\sqrt{x}+\sqrt{3a})}\right)$$

$$=\lim_{x\to 3a}\left(\frac{2}{\sqrt{x+3a}}+\frac{3\sqrt{x-3a}}{\sqrt{x+3a}\,(\sqrt{x}+\sqrt{3a})}\right)=\frac{\sqrt{6a}}{3a}$$

۱۰-

$$x=-1 \begin{cases} + \quad \lim_{x\to -1^+}\frac{1+k}{x^2-1}=-\infty \Rightarrow \frac{1+k}{0^-}=-\infty \Rightarrow 1+k>0 \Rightarrow k>-1 \\ - \quad \lim_{x\to -1^-}\frac{1+2k}{x^2-1}=-\infty \Rightarrow \frac{1+2k}{0^+}=-\infty \Rightarrow 1+2k<0 \Rightarrow k<-\frac{1}{2} \end{cases}$$

$$\Rightarrow -1<k<-\frac{1}{2} \qquad P(x,y) \Rightarrow x=k\pi \Rightarrow x<0$$

$$y=\cos k\pi \Rightarrow y<0$$

ناحیه سوم قرار دارد