Subject........................ محمد صالح محمدی

Day.... Month.... Year..........

$$\lim_{x\to ۲} \frac{۲x-۵}{x^۲+۹x+b} = -\infty \qquad a+b=-۴+۴=0$$ (۱

$$\lim_{x\to ۲} x^۲+۲ax+b = 0^+ \longrightarrow (x-۲)^۲ = x^۲-۴x+۴$$

$a=-۴$, $b=۴$

۲

$$(x-\sqrt[۳]{۴})^۲ = (x-۲^{۲/۳})^۲ = x^۲ - ۲\times۲^{۲/۳}x + ۲^{۴/۳}$$

$$\frac{۲^{۴/۳}}{-۲\times۲^{۲/۳}} = -۲^{-۱/۳} = -\sqrt[۳]{۱/۲} \longrightarrow [b/a] = -۱$$

۳

$$\lim \frac{[-x]+a}{\left|\frac{\sqrt{۳}}{۲}x+a\right|+a} = -\infty \qquad ۱/۳+۲a=0 \longrightarrow a=-۱/۹$$

$$\frac{[-x]+a}{|۱/۳+a|+a} = \frac{-۱+a}{۱/۳+۲a} = -۲$$

Subject. -

Day. - - - Month. - - - Year. - - - - - - - -

(۶

$$\frac{x^{۲} + ۱۰x + ۱۹}{۱۲ + ۶\sqrt[۳]{x}} \qquad \frac{\frac{۲x + ۱۵}{۱}}{\frac{+ ۶ \times ۱}{\cancel{۳\sqrt[۳]{x^{۲} + ۴}}}} = ۴x + ۲۰$$

$$\longrightarrow -۲۲ + ۲۰ = -۲$$

(۵

$$\frac{x^{۲} - ۴}{x^{۳} - ۸} \longrightarrow \frac{(x-۲)(x+۲)}{(x-۲)(x^{۲}+۲x+۴)} = \frac{۴}{۴+۴+۴} = ۱/۳$$

(۴

$$\frac{۱۶x - \left[-۲/x^{۲}\right]}{۲۴x + \left[\frac{۳}{x^{۲}}\right]} = \frac{۱۹x + ۹}{۴۴x + ۱۲} \longrightarrow \frac{۱}{۵۲} = +$$

Subject.

Day. Month. Year.

$$\frac{x+\cos(\sqrt{a}\,x)}{kx^2} = 2 \qquad (8$$

$$\frac{k+1-\frac{ax^2}{2}}{kx^2} = 3 \qquad \frac{\frac{2k+2-ax^2}{2}}{kx^2} = 3$$

$$\frac{2k+2-ax^2}{2kx^2} = 3 \xrightarrow{hop} \frac{-2ax}{4kx} = \frac{-2a}{4k} = 3$$

$$\frac{-a}{2k} = 3 \qquad \frac{a}{k} = -6$$

$$\lim_{x \to 0} \frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} \xrightarrow{hop} \frac{\frac{3}{2\sqrt{2+3x}}-\frac{-1}{2\sqrt{2-x}}}{\frac{+\sin x}{2\sqrt{1-\cos x}}} \qquad (7$$

$$\frac{+}{0} \to +\infty$$

Subject.

Day. Month. Year.

(10

$$\frac{1-k[x]}{x^2-1} = -\infty$$

$$x \to -1^- \qquad \frac{1+2k}{0^+} = -\infty \quad \to 1+2k<0 \quad k<-1/2$$

$$x \to -1^+ \qquad \frac{1+k}{0^-} = -\infty \quad 1+k>0 \quad k>-1$$

$$\to \quad -1<k<-1/2$$

(9

$$a-a^2 \qquad a(1-a)$$

$$\frac{2\cancel{\sqrt{x-3a}}^{\,0} + \cancel{3\sqrt{x}}^{\,3\sqrt{3a}} - \sqrt{27a}}{\sqrt{x^2-9a^2}} \quad 9a \quad = \frac{3(\sqrt{3a}-3a)}{0^+} =$$

$$\xrightarrow{0<a<1} \underline{+\infty}$$

$$\xrightarrow{1<a} \underline{-\infty}$$