$$\lim_{x\to+\infty}\frac{(x+3)^3-x(x-1)(x+1)}{\sqrt{x}\left(\sqrt{x^5-x^4}-\sqrt{x^5+x^4}\right)}=\lim_{x\to+\infty}\frac{x^3+3\cdot3x^2+3\cdot9x+27-(x^3-x)}{\sqrt{x}\left(\sqrt{x^5-x^4}-\sqrt{x^5+x^4}\right)}=$$

$$\boxed{\begin{array}{l}\text{ZT}\\ \text{LS 16/17}\\ \text{VAR D}\end{array}}$$

$$=\lim_{x\to+\infty}\frac{9x^2+28x+27}{\sqrt{x}}\cdot\frac{1}{\underbrace{\left(\sqrt{x^5-x^4}-\sqrt{x^5+x^4}\right)}_{„+\infty\ -\ (+\infty)"}\left[\frac{\sqrt{x^5-x^4}+\sqrt{x^5+x^4}}{\sqrt{x^5-x^4}+\sqrt{x^5+x^4}}\right]}=$$

$$=\lim_{x\to+\infty}\frac{9x^2+28x+27}{\sqrt{x}}\cdot\frac{1}{\frac{x^5-x^4-x^5-x^4}{\sqrt{x^5-x^4}+\sqrt{x^5+x^4}}}=$$

$$=\lim_{x\to+\infty}\frac{\cancel{x^2}\left(9+\frac{28}{x}+\frac{27}{x^2}\right)}{\cancel{x^{\frac{1}{2}}}}\cdot\frac{\cancel{x^{\frac{5}{2}}}\left[\sqrt{1-\frac{1}{x}}+\sqrt{1+\frac{1}{x}}\right]}{-2\cancel{x^4}}=\frac{9\cdot\left[\sqrt{1}+\sqrt{1}\right]}{-2}=-9$$

$$\frac{x^2\cdot x^{\frac{5}{2}}}{x^{\frac{1}{2}}\cdot x^4}=\frac{x^{9/2}}{x^{9/2}}=1$$