

#27) 2.6

$$27 \quad \lim_{x \rightarrow \infty} \frac{\sqrt{x^2+ax} - \sqrt{x^2+bx}}{1} \cdot \frac{\sqrt{x^2+ax} + \sqrt{x^2+bx}}{\sqrt{x^2+ax} + \sqrt{x^2+bx}} = \frac{\sqrt{x^2+ax} - \sqrt{x^2+bx}}{\sqrt{x^2+ax} + \sqrt{x^2+bx}}$$

$$\frac{x^2+ax - (x^2+bx)}{\sqrt{x^2+ax} + \sqrt{x^2+bx}} = \frac{ax - bx}{\sqrt{x^2+ax} + \sqrt{x^2+bx}}$$

$$a-b \cdot \left[\frac{x/x}{\sqrt{\frac{x^2+ax}{x^2}} + \sqrt{\frac{x^2+bx}{x^2}}} \right] = \frac{1}{2}(a-b)$$

$$\sqrt{1+0} + \sqrt{1+0}$$

$$\lim_{x \rightarrow \infty} \frac{1}{2}(a-b)$$