

Name: _____ Score: _____

Teacher: _____ Date: _____

Limits at Infinity – Transcendental functions

Evaluate the following limits:

1. $\lim_{x \rightarrow -\infty} \ln(3 - 7x - x^3)$
2. $\lim_{y \rightarrow -\infty} \ln(7 - 6y^5)$
3. $\lim_{x \rightarrow -\infty} \ln\left(\frac{3x^4 - 8}{2 + x^2}\right)$
4. $\lim_{x \rightarrow \infty} \ln\left(\frac{9 + 7x}{x^3 + 6x}\right)$
5. $\lim_{x \rightarrow \infty} \ln\left(\frac{10x + 8x^2}{x^2 - 1}\right)$
6. $\lim_{z \rightarrow -\infty} \tan^{-1}(7 - z + 3z^5)$
7. $\lim_{x \rightarrow \infty} \tan^{-1}(4x^2 - x^6)$
8. $\lim_{z \rightarrow \infty} \tan^{-1}\left(\frac{4 + 7z}{2 - z}\right)$
9. $\lim_{x \rightarrow \infty} \tan^{-1}\left(\frac{3x^2 - 9x^4}{4x - x^3}\right)$
10. $\lim_{w \rightarrow \infty} \tan^{-1}\left(\frac{4w^3 + w^2}{1 + 3w}\right)$