Review Worksheet

1. Solve for $t$: $\cos t \sin t + \cos t = 0$

2. Evaluate: $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

3. Evaluate: $\lim_{x \to 0^+} e^{\frac{1}{x}}$ and $\lim_{x \to 0^-} e^{\frac{1}{x}}$

4. Differentiate: $\ln(x^{-4} + x^4)$

5. Differentiate: $e^{2x+3y} = x^2 - \ln(xy^3)$

6. Differentiate: $\lim_{x \to \infty} \frac{x^2}{e^x}$

7. A 15 ft. ladder is resting against the wall. The bottom is initially 10 ft. away from the wall and is being pushed towards the wall at a rate of $\frac{1}{4}$ ft/sec. How fast is the top of the ladder moving up the wall 12 seconds after we start pushing?

8. We need to enclose a field with a fence. We have 500 ft. of fencing material and a river is on one side of the field and won’t need any fencing. Determine the dimensions of the field that will enclose the largest area.