Name: _____

This page contains problems that use techniques you will need for Section 4.5 #231, 235 and 237

For each function, find all the critical points in the given domain.

1. $f(x) = e^x \cos(x)$ in $[0, 2\pi]$

2. $f(x) = \sin(\pi x/2) - \cos(\pi x/2)$ on $[-2, 2]$

3. $f(x) = \frac{5}{x+1}$ on $(-\infty, -1) \cup (-1, \infty)$

This page contains skills / facts needed in Section 4.6.

1. Sketch the graph of $y = \tan^{-1}(x)$. Include and label asymptotes. Label at least three points.

2. Graph $y = e^x$ and $y = e^{-x}$ on the same set of axes. Label the points associated with $x = -1$, $x = 0$, and $x = 1$ on both graphs.

3. On separate axes, graph $y = x^2$, $y = \sqrt{x}$, $y = 1/x^2$.

4. For all of the graphs above, describe the **end behavior** of the graphs. This means, describe what happens for really large x values (think 10^{100} and really small x-values (think -10^{100}. Note "small" means toward negative infinity, not close to zero.