

# LECTURE NOTES: 4-5 CURVE SKETCHING (PART 2)

**WARM UP PROBLEM** Find your copy of the Graphing Guidelines!

**PRACTICE PROBLEMS**

1. Sketch the curve  $y = x - 2 \sin x$  on  $[-2\pi, 2\pi]$ .
  - (a) Find the domain.
  - (b) Find the  $x$  and  $y$ -intercepts.
  - (c) Find the symmetries/ periodicity of the curve.
  - (d) Determine the asymptotes.
  - (e,f) Determine where the function is increasing/ decreasing and find the local maximum/ minimum values

(g) Find the intervals of concavity/inflection points.

(h) Sketch the curve.

2. Sketch the curve  $y = \frac{x}{\sqrt{9 + x^2}}$

(a) Find the domain.

(b) Find the  $x$  and  $y$ -intercepts.

(c) Find the symmetries/ periodicity of the curve.

(d) Determine the asymptotes.

(e,f) Determine where the function is increasing/ decreasing and find the local maximum/ minimum values

(g) Find the intervals of concavity/inflection points.

(h) Sketch the curve.

3. Sketch the curve  $y = e^x/x^2$

(a) Find the domain.

(b) Find the  $x$  and  $y$ -intercepts.

(c) Find the symmetries/ periodicity of the curve.

(d) Determine the asymptotes.

(e,f) Determine where the function is increasing/ decreasing and find the local maximum/ minimum values

(g) Find the intervals of concavity/inflection points.

(h) Sketch the curve.