**WORKSHEET VIII**

**Curve sketching: a prelude (revised)**

1.



2.



3. Consider the graph of the function below.

(a) How many critical points does *f* have?

(b) How many local minima does *f*  have? Where are they located?

(c) How many local maxima does *f* have? Where are they located?

(d) Where is the global max of f(x)?

(e) Where is the global min of f(x)?



4. State the *Compactness Theorem* (aka *Extreme Value Theorem*).

5. *True or False?* A global max is always a critical point.

6. *True or False?* A function defined on a closed interval [a, b] must have a global maximum *and* a global minimum.

7.





8. Find the critical points of the function f(x) = (x – 3)5(x + 4)9. Sketch the curve.

 *Stewart exercises:*



*Stewart exercises:*

Find the critical points of each function defined below:





Find the global extrema of each of the following functions:





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