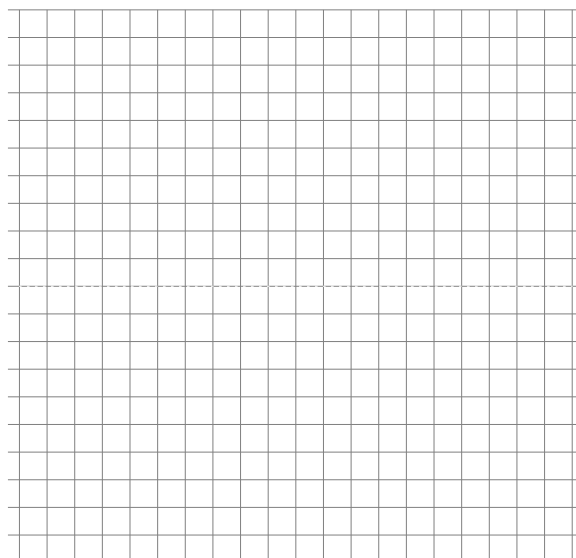
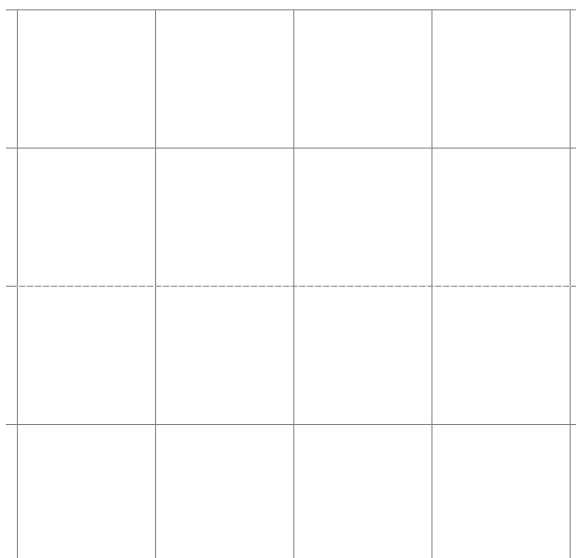


For each the functions $f(x)$ listed below do the following:

1. identify the symmetry ((odd/even/none), range and domain
2. identify domain where f is differentiable
3. identify asymptotes and sketch a crude graph on the left
4. identify all critical points
5. identify all max/min; indicate the absolute. Comment if the 2nd derivative test cannot be applied
6. indicate the regions where f is monotone
7. identify the inflection points
8. explore the concavity of the curve
9. make a good graph on right

1.

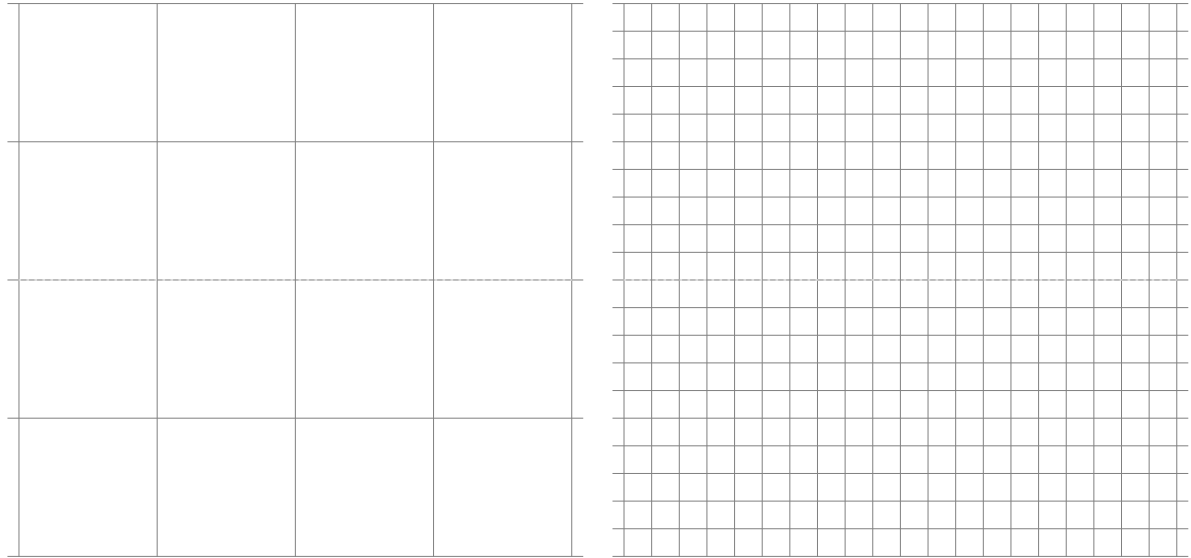
$$f = |\sin x|$$



2

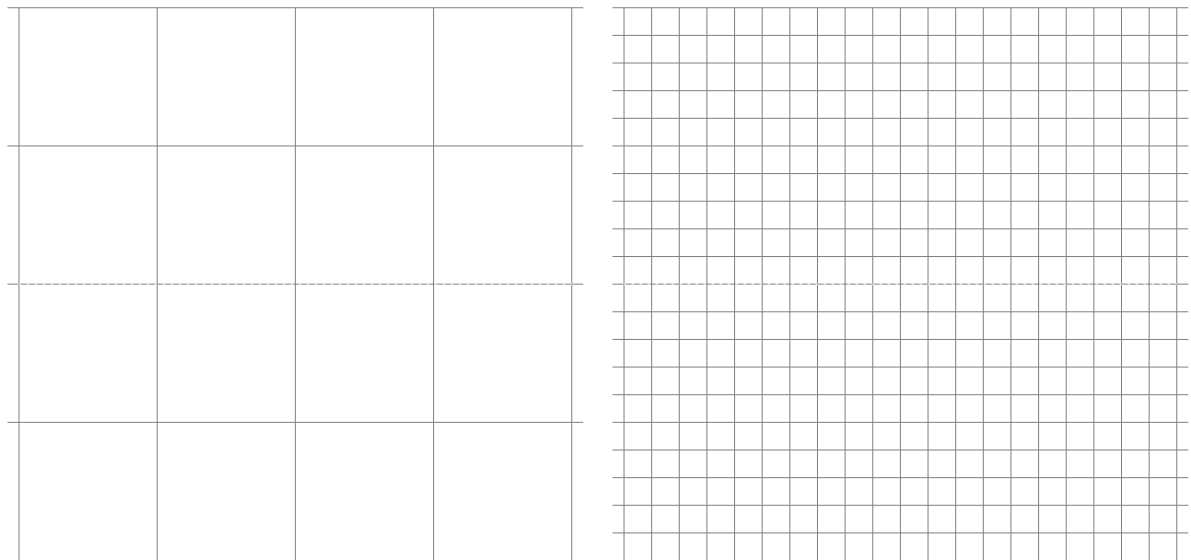
2.

$$f = \sqrt{1 - x^2}$$



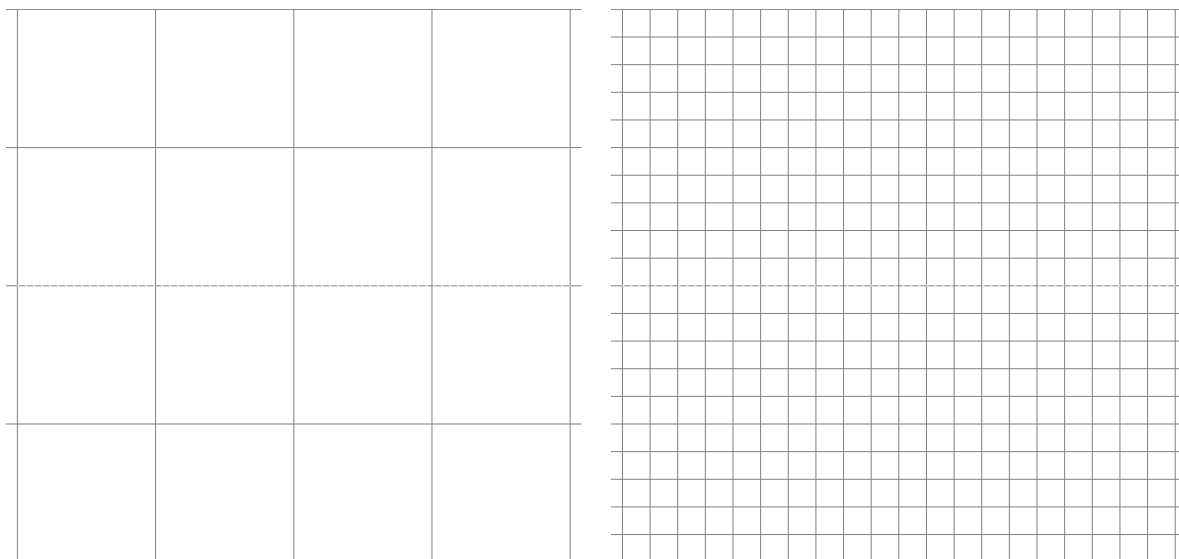
3.

$$f = x - \sin x$$



4.

$$f = 2x - \sin x$$



5.

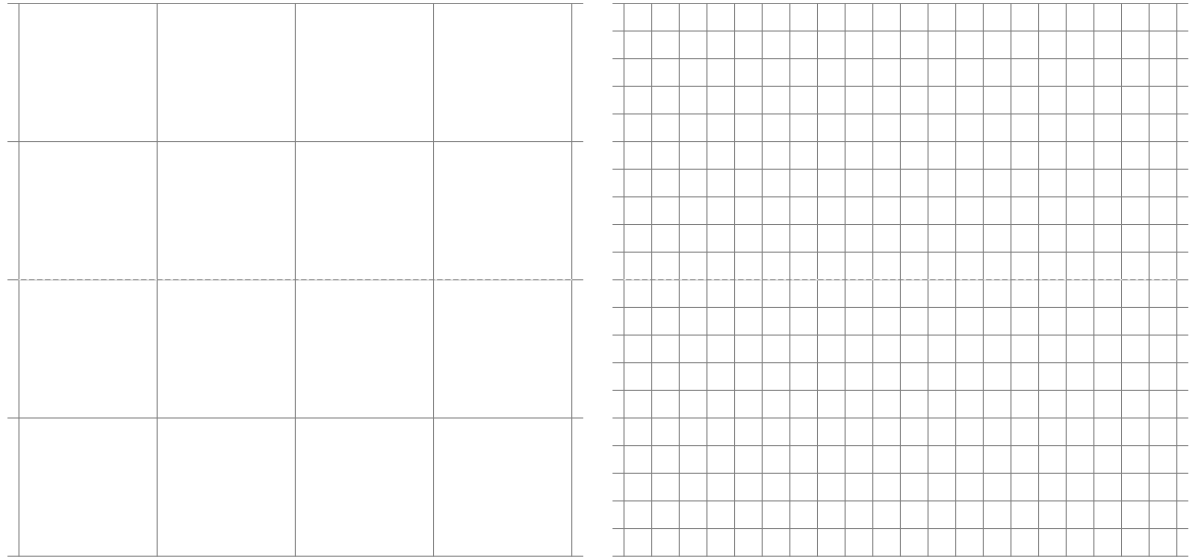
$$f = x - \sin(2x)$$



4

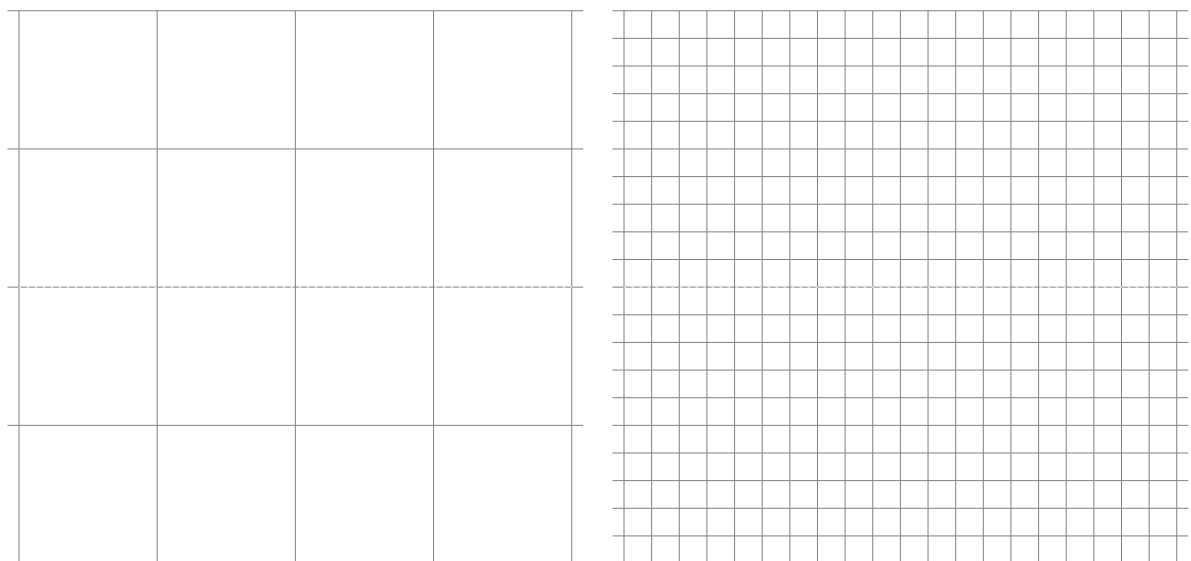
6.

$$f = x^2 - x^3$$



7.

$$f = x^4 - x^3$$



8.

$$f = \frac{x^2 - x + 1}{x - 1}$$

