April 16, 2026 **Group Project 1** MTH151

Print all group member names at the top of the page. For each function, complete each part and fill in as much information as possible. **Show ALL work.**

1. Answer the following questions about the function, then sketch the curve.

$$f(x) = x^{5/3} - 5x^{2/3}$$

(a) What is the domain?

(b) What are the intercepts? (x and y)

(c) Does the graph have symmetry? (Even, odd, periodic)

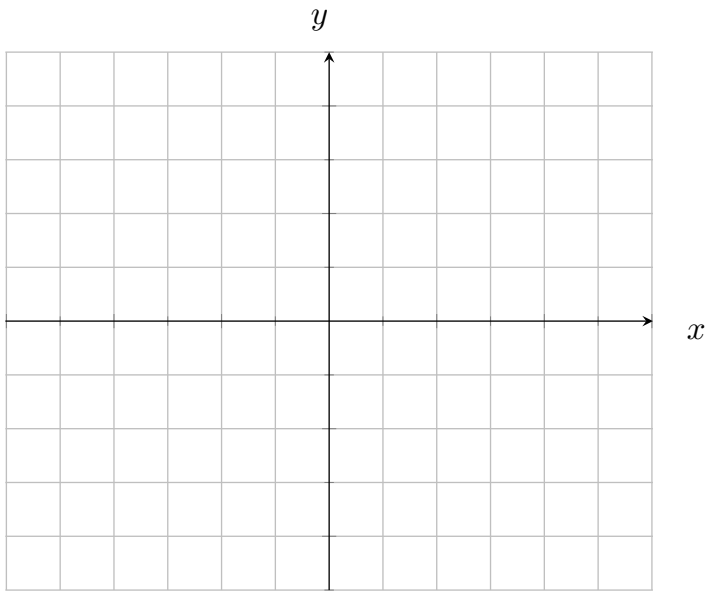
(d) Does the graph have and asymptotes? (Horizontal, vertical, slant)

(e) What are the intervals of increase / decrease?

(f) What are the local maximum and minimum values?

(g) What are the intervals of concave up / concave down? What are the inflection points?

(h) Sketch the curve:



2. Answer the following questions about the function, then sketch the curve.

$$f(x) = x\sqrt{2 - x^2}$$

(a) What is the domain?

(b) What are the intercepts? (x and y)

(c) Does the graph have symmetry? (Even, odd, periodic)

(d) Does the graph have and asymptotes? (Horizontal, vertical, slant)

(e) What are the intervals of increase / decrease?

(f) What are the local maximum and minimum values?

(g) What are the intervals of concave up / concave down? What are the inflection points?

(h) Sketch the curve: