Math 19A   Name (Print): _____
Spring 2023
More practice exam problems
May 12, 2023
Time Limit: 65 Minutes

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This exam contains 8 pages (including this cover page) and 4 problems. Check to see if any pages are missing. Enter all requested information on the top of this page, and put your initials on the top of every page, in case the pages become separated.

You may *not* use your books, notes, or any calculator on this exam.

You are required to show your work on each problem on this exam. The following rules apply:

- **Organize your work**, in a reasonably neat and coherent way, in the space provided. Work scattered all over the page without a clear ordering will receive very little credit.

- **Clearly indicate your final answer** by for example circling it.

- **Mysterious or unsupported answers will not receive full credit**. A correct answer, unsupported by calculations, explanation, or algebraic work will receive no credit; an incorrect answer supported by substantially correct calculations and explanations might still receive partial credit.

- If you need more space, use the back of the pages; clearly indicate when you have done this.

Do not write in the table to the right.

Problem	Points	Score
1	20	
2	20	
3	20	
4	0	
Total:	60	

1. Find the derivatives of the following functions.

   (a) (10 points) $f(t) = 5t^3 - 3t^5$

   (b) (10 points) $f(x) = 2e^{-x} + e^{3x}$

2. Each of the pictures below is the graph of a function. The graph of the *derivative* is one of the
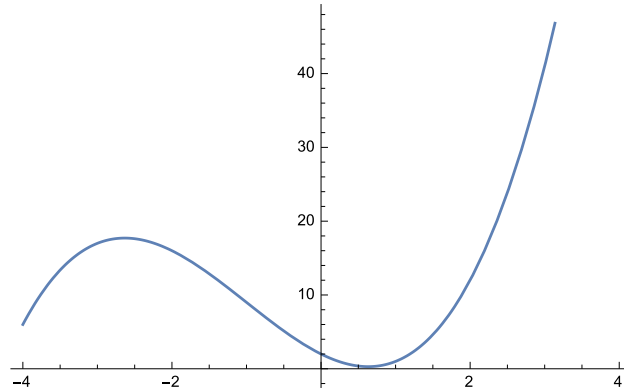   graphs pictured on the LAST two pages. Circle the graph that is the graph of the derivative.

Figure 1: Problem 2(a) graph

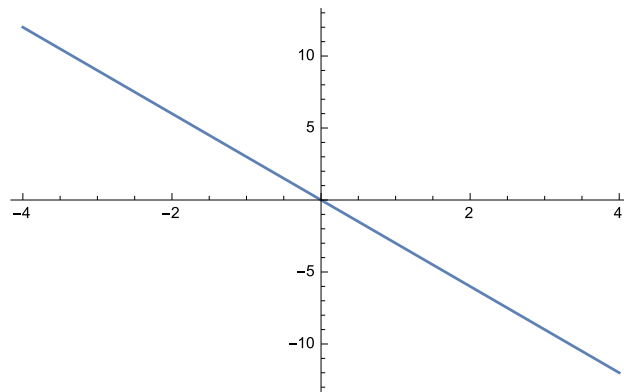(a) (5 points) A. Graph (1)   B. Graph (2)   C. Graph (3)   D. Graph (4)   E. Graph (5)
    F. Graph (6)

Figure 2: Problem 2(b) graph

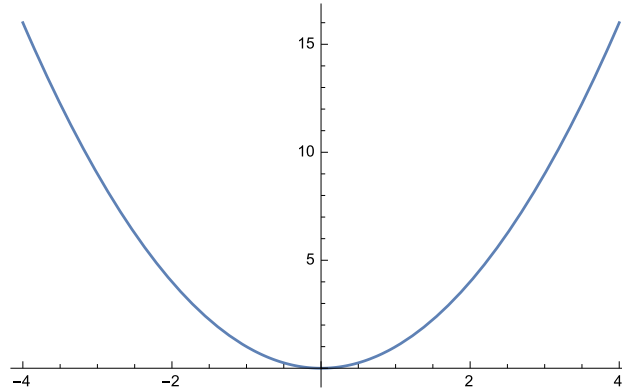(b) (5 points) A. Graph (1)   B. Graph (2)   C. Graph (3)   D. Graph (4)   E. Graph (5)
    F. Graph (6)

Figure 3: Problem 2(c) graph

(c) (5 points) A. Graph (1)   B. Graph (2)   C. Graph (3)   D. Graph (4)   E. Graph (5)
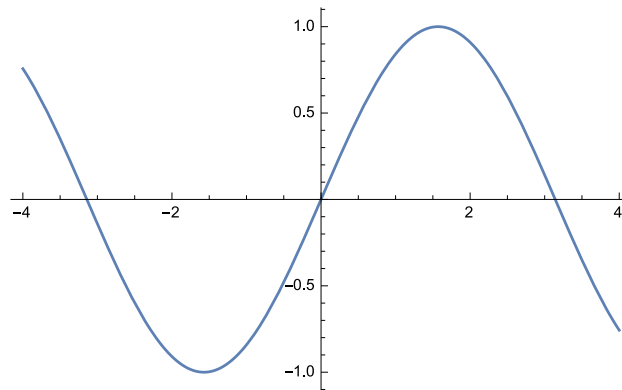   F. Graph (6)

Figure 4: Problem 2(d) graph

(d) (5 points) A. Graph (1)   B. Graph (2)   C. Graph (3)   D. Graph (4)   E. Graph (5)
       F. Graph (6)

3. Find the derivatives of the following functions.

   (a) (10 points)

$$f(x) = \sqrt{3x^2 - 4x + 6}.$$

   (b) (10 points)

$$f(x) = \ln(x^2).$$

4. Do these exams questions cover all the topics we have covered since Exam 1. If not, what topics are missing? How are you going to study those topics for Exam 2?
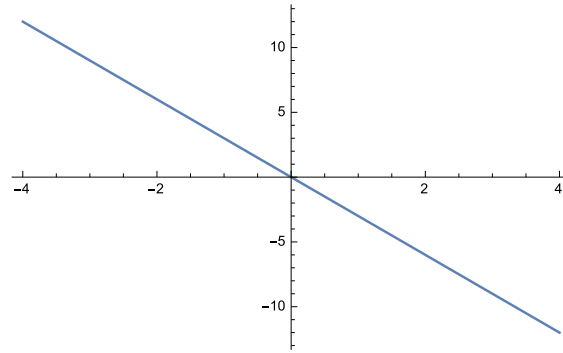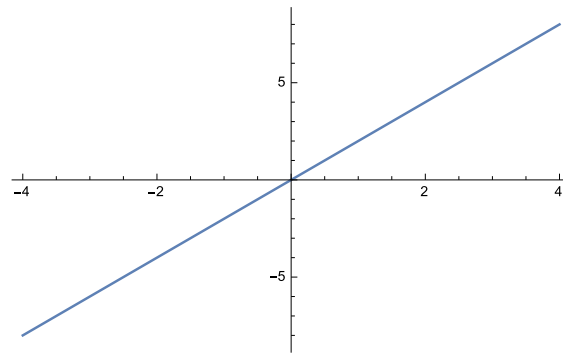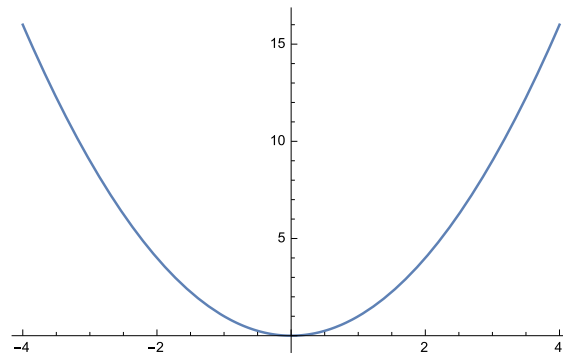
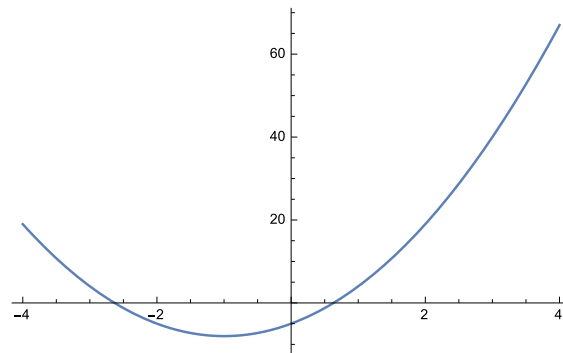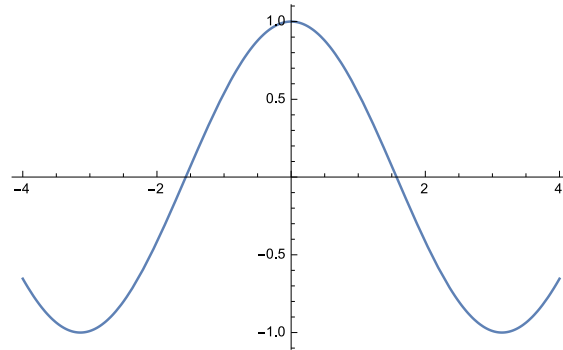Figure 5: Graph (1)

Figure 6: Graph (2)

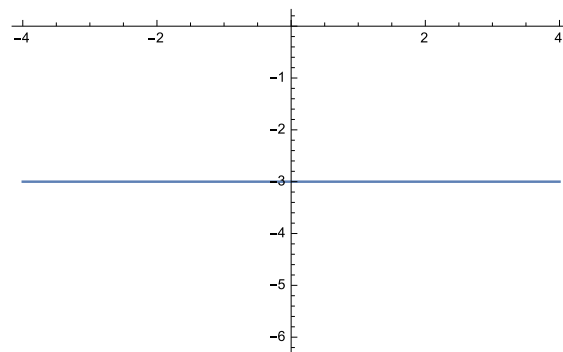Figure 7: Graph (3)

Figure 8: Graph (4)

Figure 9: Graph (5)

Figure 10: Graph (6)