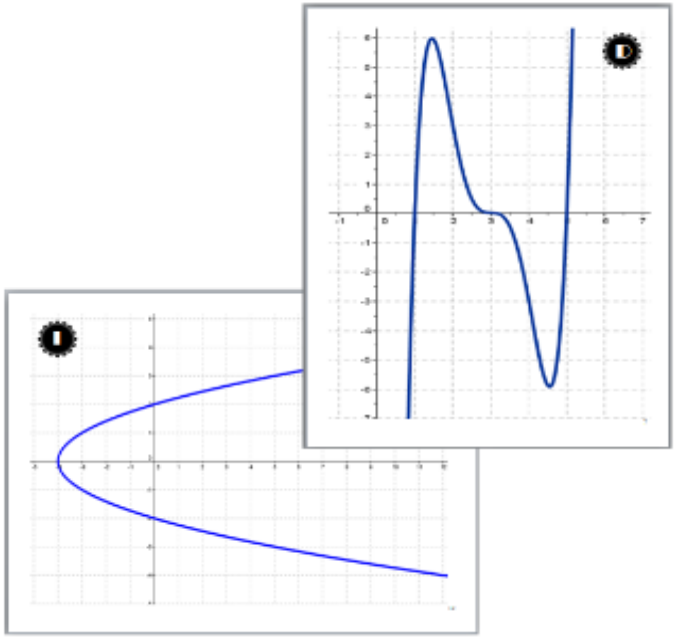
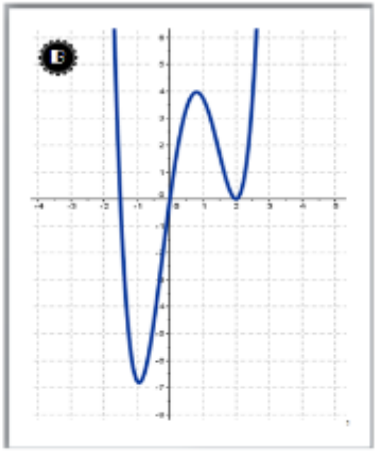
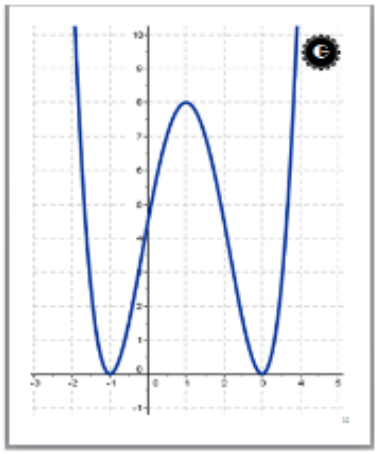


10 Graphs





PARTS OF GRAPHS

Domain

y-intercept

Function?

Maximum

Range

x-intercept

increasing interval

End Behavior

Minimum

decreasing interval

35 Which graph(s) are increasing on the intervals $(-\infty,-1)\cup(1,\infty)$?

19 Which graph(s) have a y-intercept that is not visable on the graph.?

26 Which graph(s) have a relative maximum at (1,8)?

21 Which graph(s) have an intercept at (0,-1)?

12 Which graph(s) have a range of $(-\infty, 7]$?

1 Find the dom of each grap

9 Which graph(s) have a domain of $(-\infty,\infty)$?

3 Find the x-intercepts of each graph

27 Which graph(s) have extrema at (-1, 0) and (1,-4)?

46 Task Cards

PARTS OF GRAPHS

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Extrema Cards ..... **Error! Bookmark not defined.**

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Instructions and Suggestions

This packet adapts to many possible teaching techniques.

1) **A Walk-Around Activity**
   - Place the 10 graphs around your room.
   - Pick the task cards that match the skills you are reviewing. Decide how many cards students should work.
   - Place the cards upside down and have students randomly pick a card.
   - Students then find the graph or graphs that have the qualities listed on the cards. They write the card number and answer on their sheets; then they return their card to the pile and pick another one.

2) **Interactive Bulletin Board**

   Place the graphs on your bulletin board. Then place 6-8 cards around the graphs. When students finish their work early, they can go to the board and complete the task cards. Every couple of days, change the cards.

3) **Short Practice**

   Great for a quick review, bell work, or checking for understanding.
   After teaching a topic (i.e. increasing intervals), give students a small version of the graphs and the 8 cards related to that topic. If students can complete the cards, then they are ready to move on. Go a step further and have students pick a card and explain to the class how they worked the problem.

4) **Posters/Presentations**

   Split class into groups. Give each group a graph and cards 1-8. They must answer all the cards' questions then present their graph to the class. Send the graph to them electronically and they can use PowerPoint or other online presentation tools.

   Another idea would be for them to make a wanted poster, using the properties of the graph to describe the "criminal."

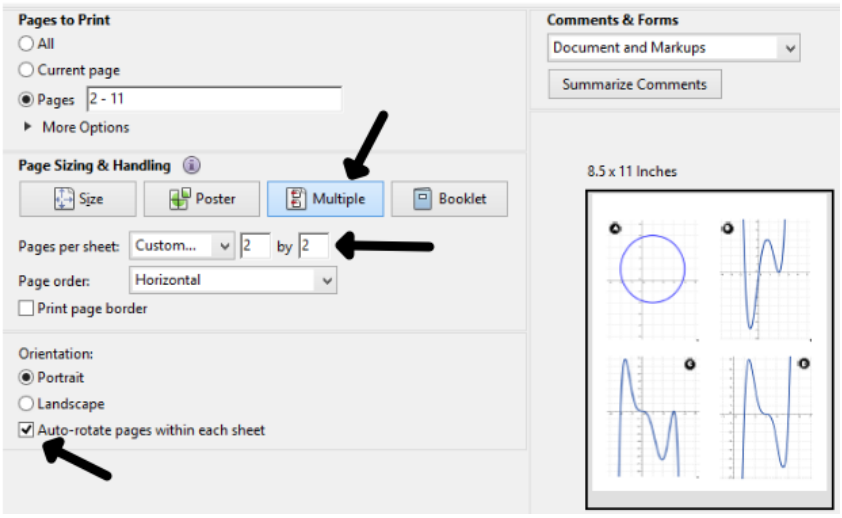
Printing Ideas

I recommend laminating the graphs and task cards for extended use. Students can draw on the laminated graphs with dry erase markers.

This can be turned into a table top activity by printing multiple graphs on one page.

To do this:

- Click on Multiple.
- Decided how many pages per sheet you would like. I recommend 4 per sheet (2 by 2).
- Click the button Auto-rotate pages. (This will cause all pages to print the same size whether they are horizontal or vertical.)

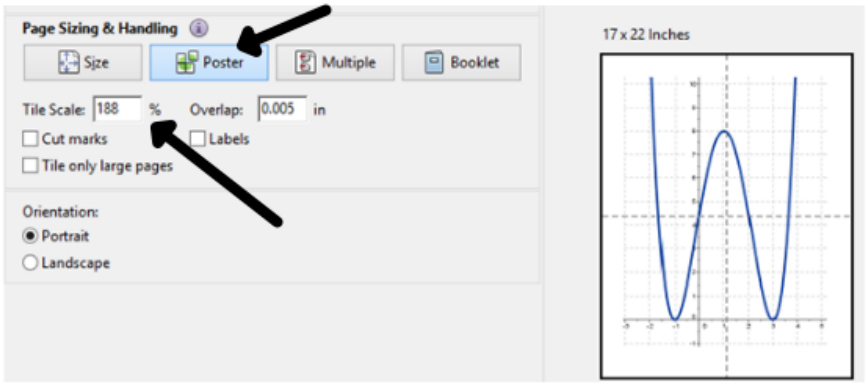


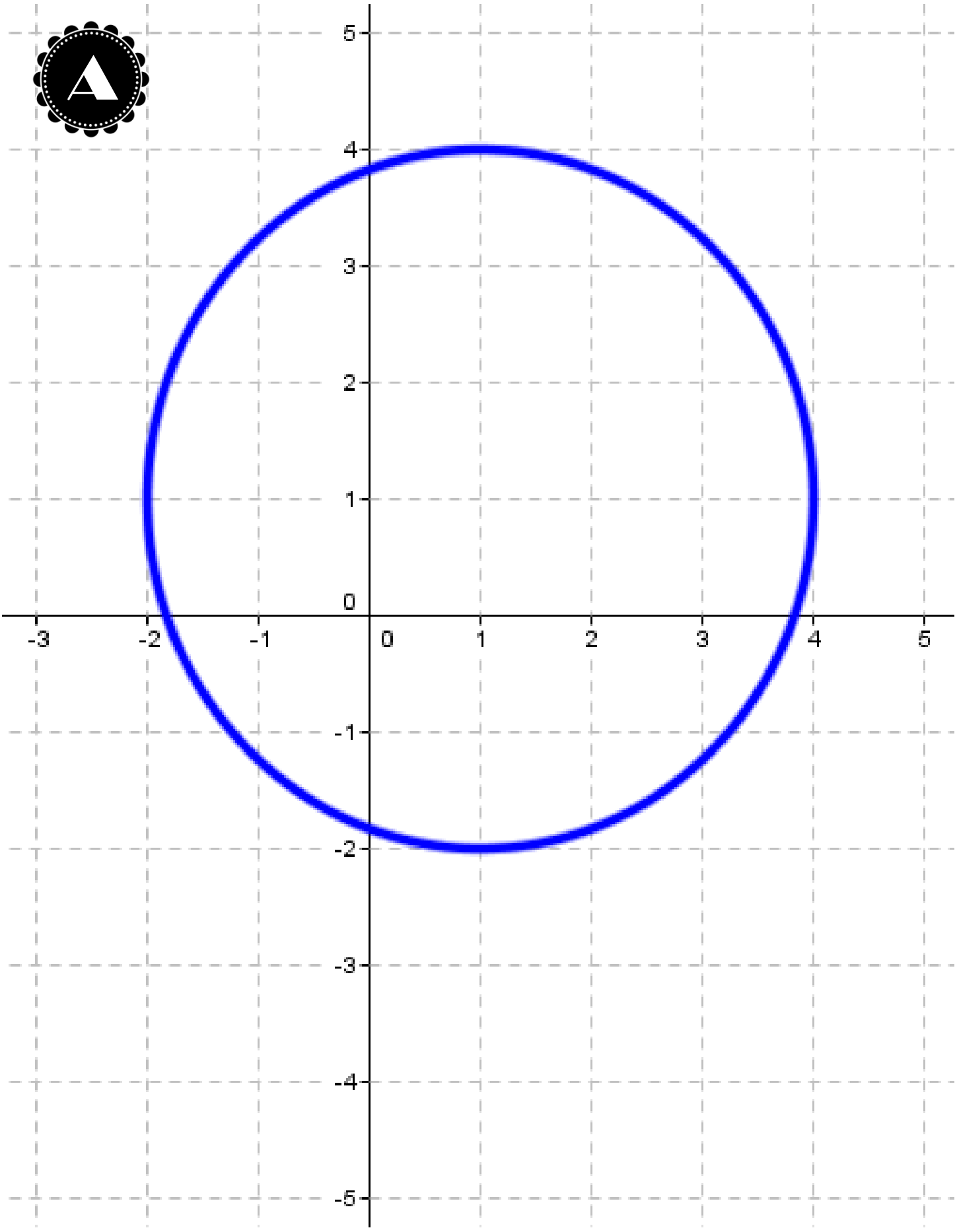
You can also print an enlarged graph to use as an interactive bulletin board.

To enlarge the graphs:

- Click on Poster.
- Tile scale = 122% to print on 2 pages.
- Tile scale = 188% to print on 4 pages.

Note: Larger enlargements may blur the graphs.

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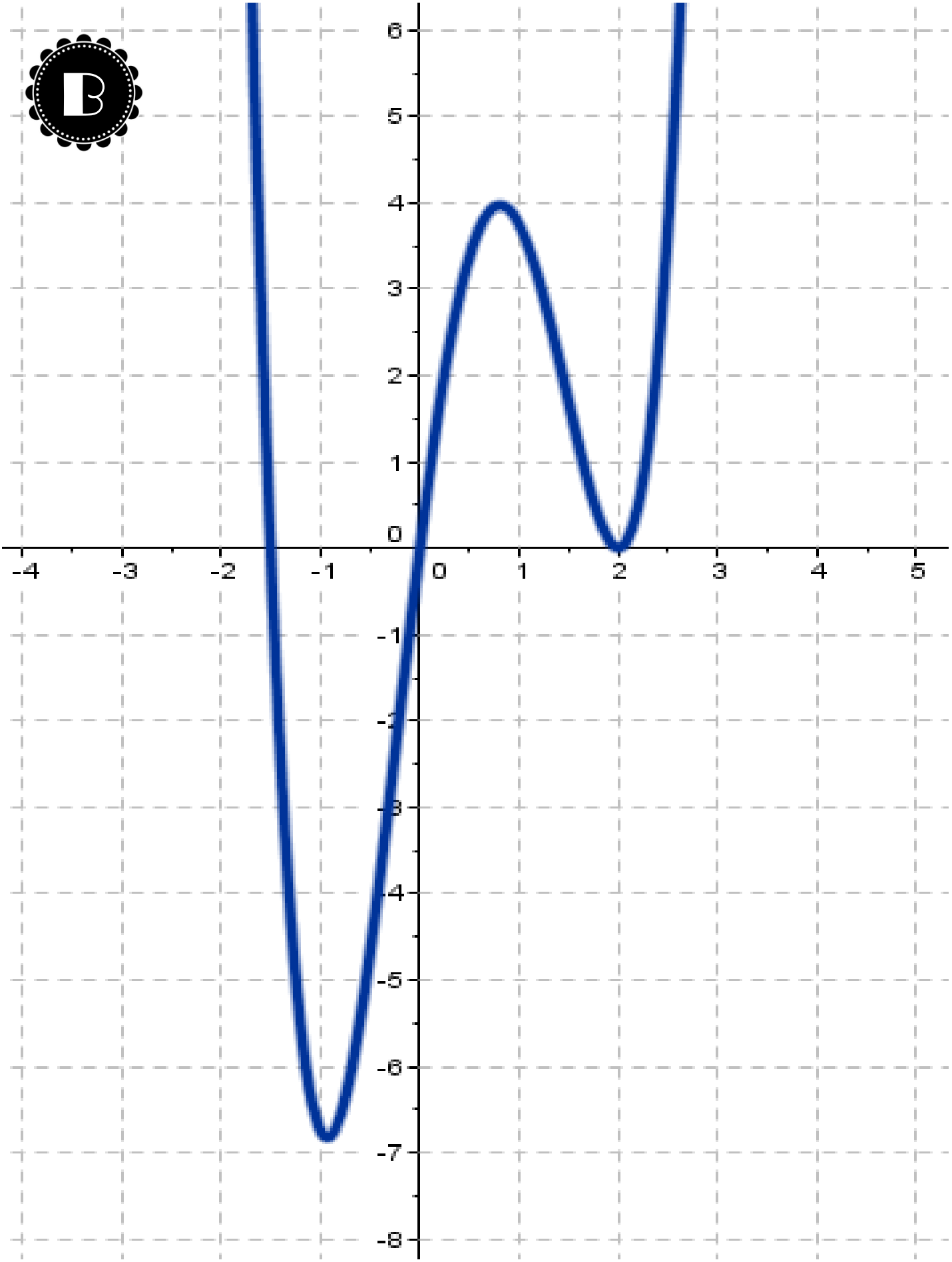
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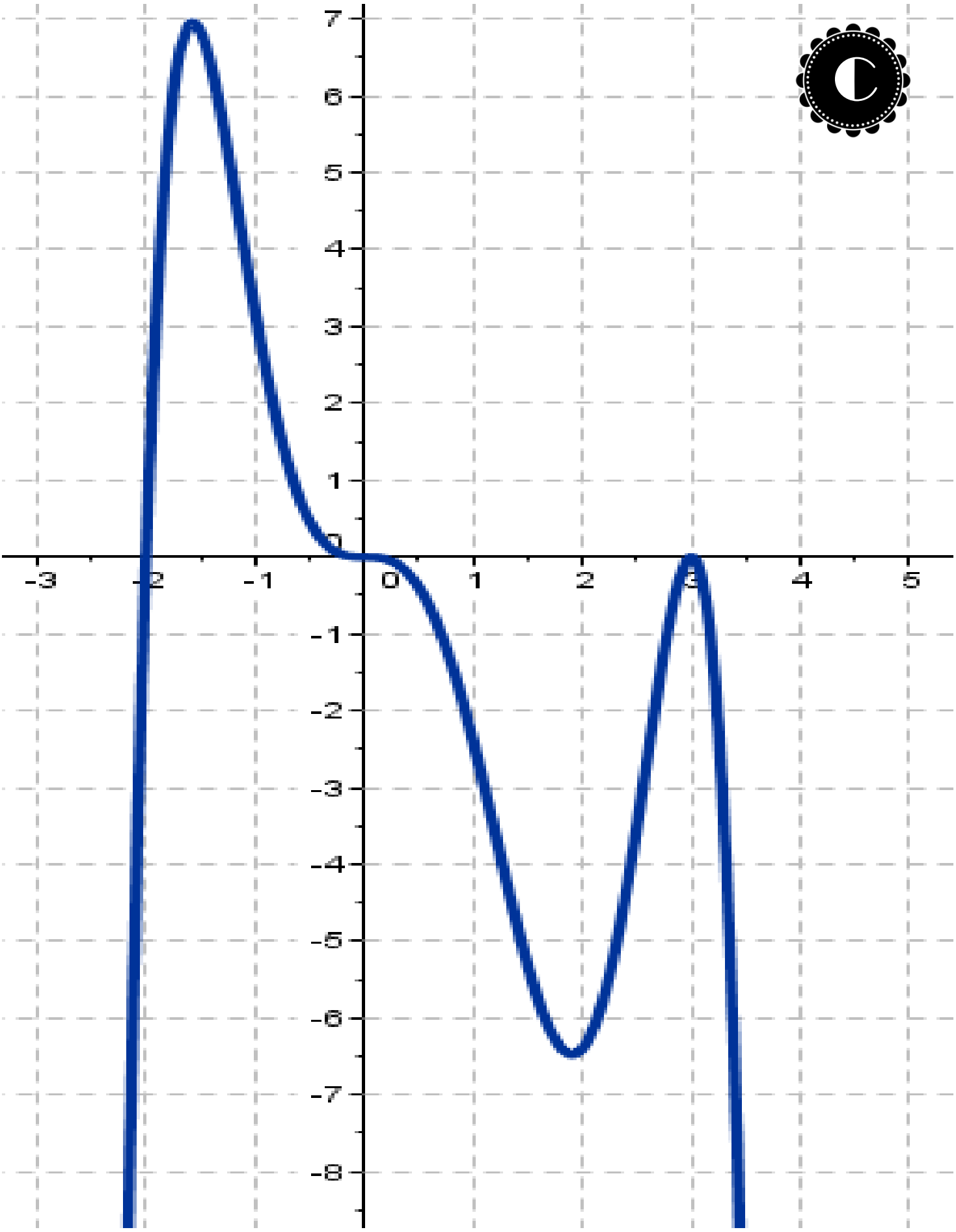
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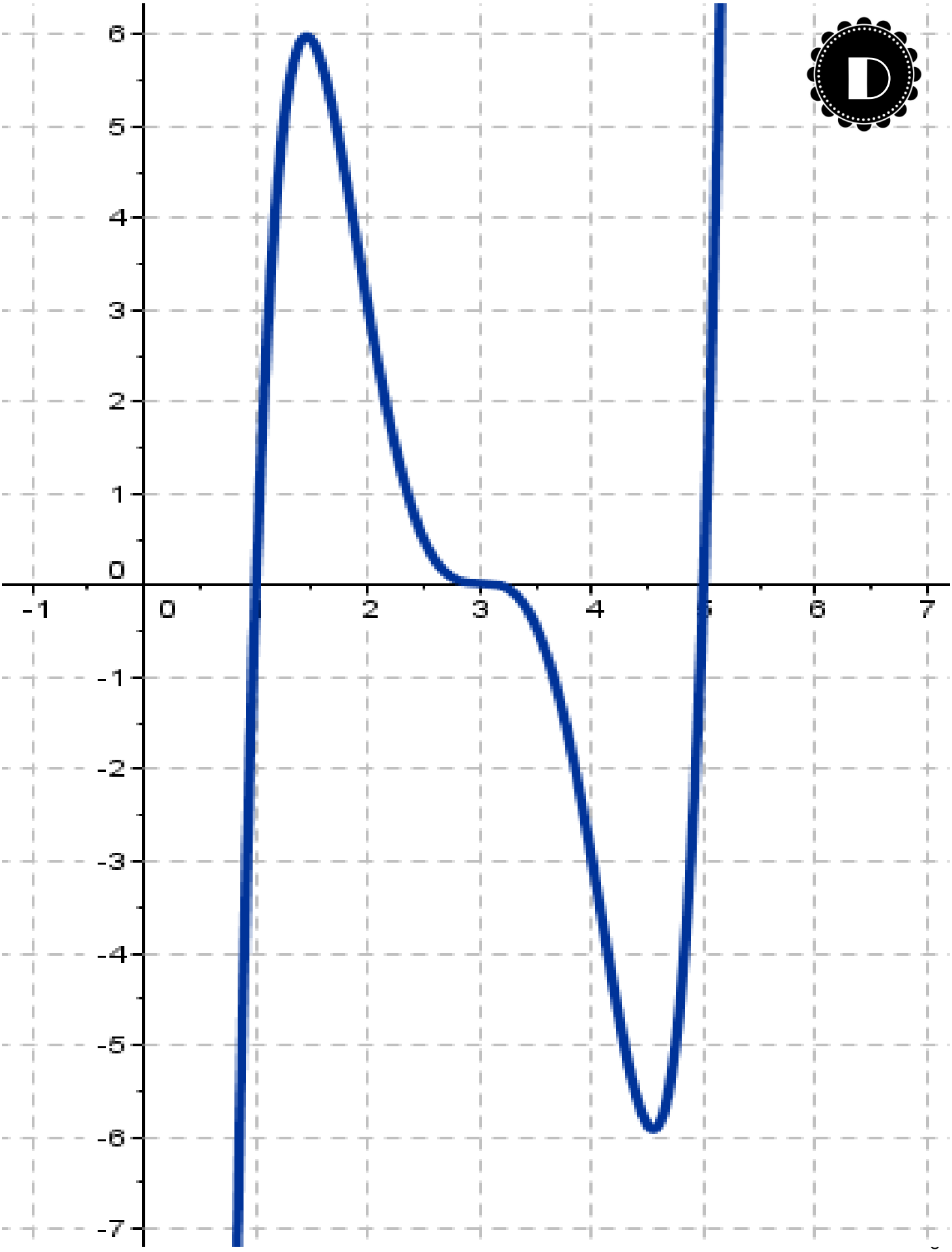
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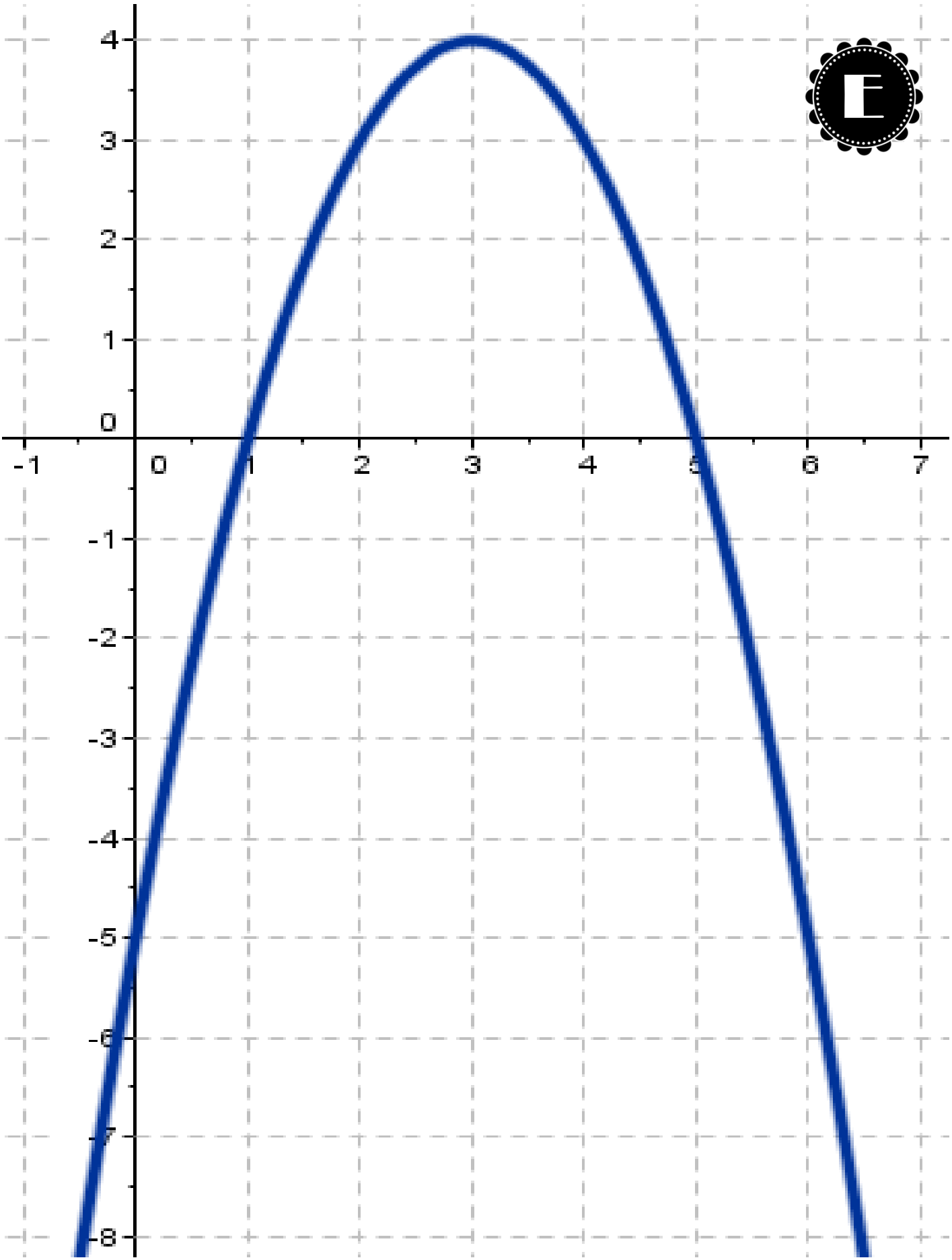
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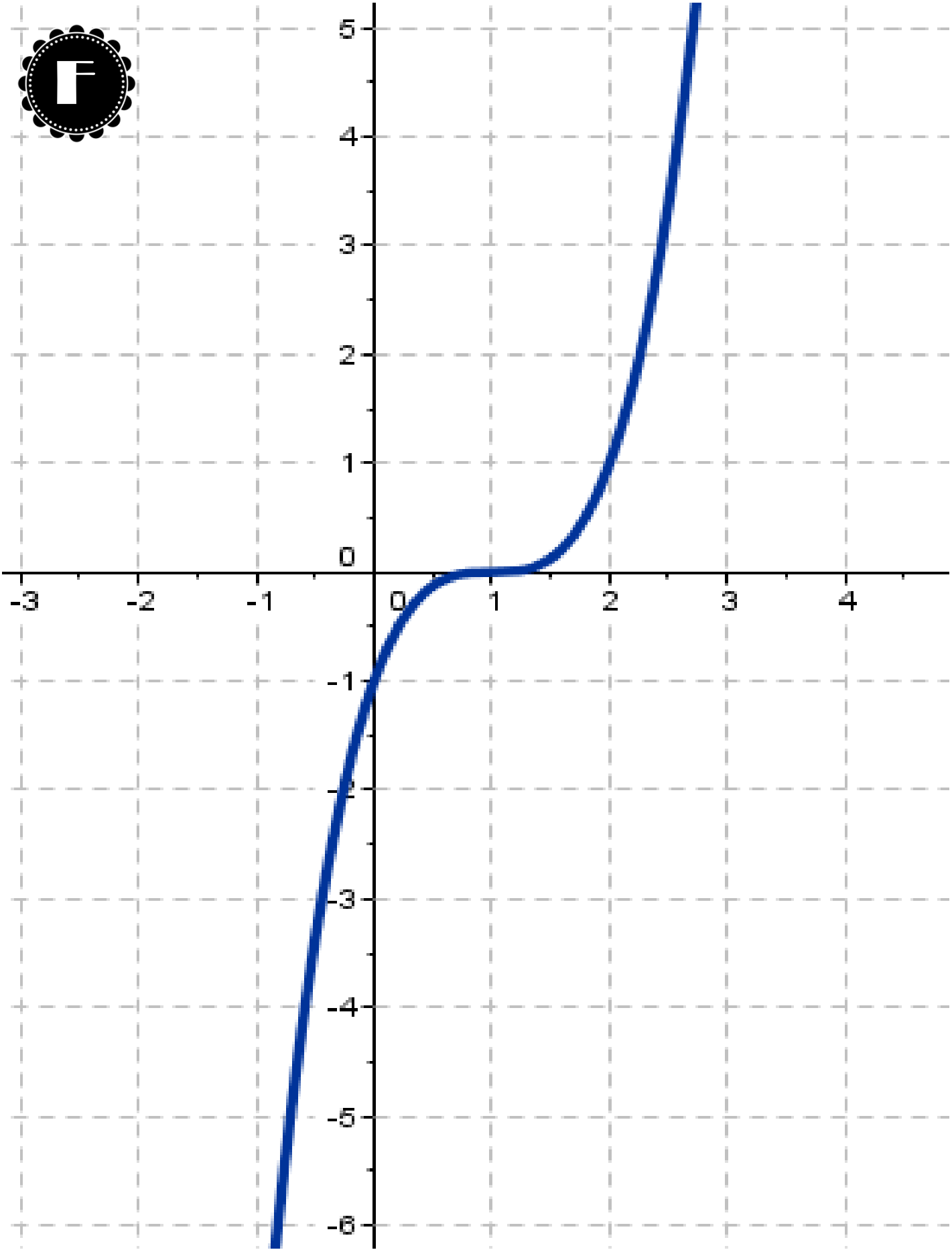
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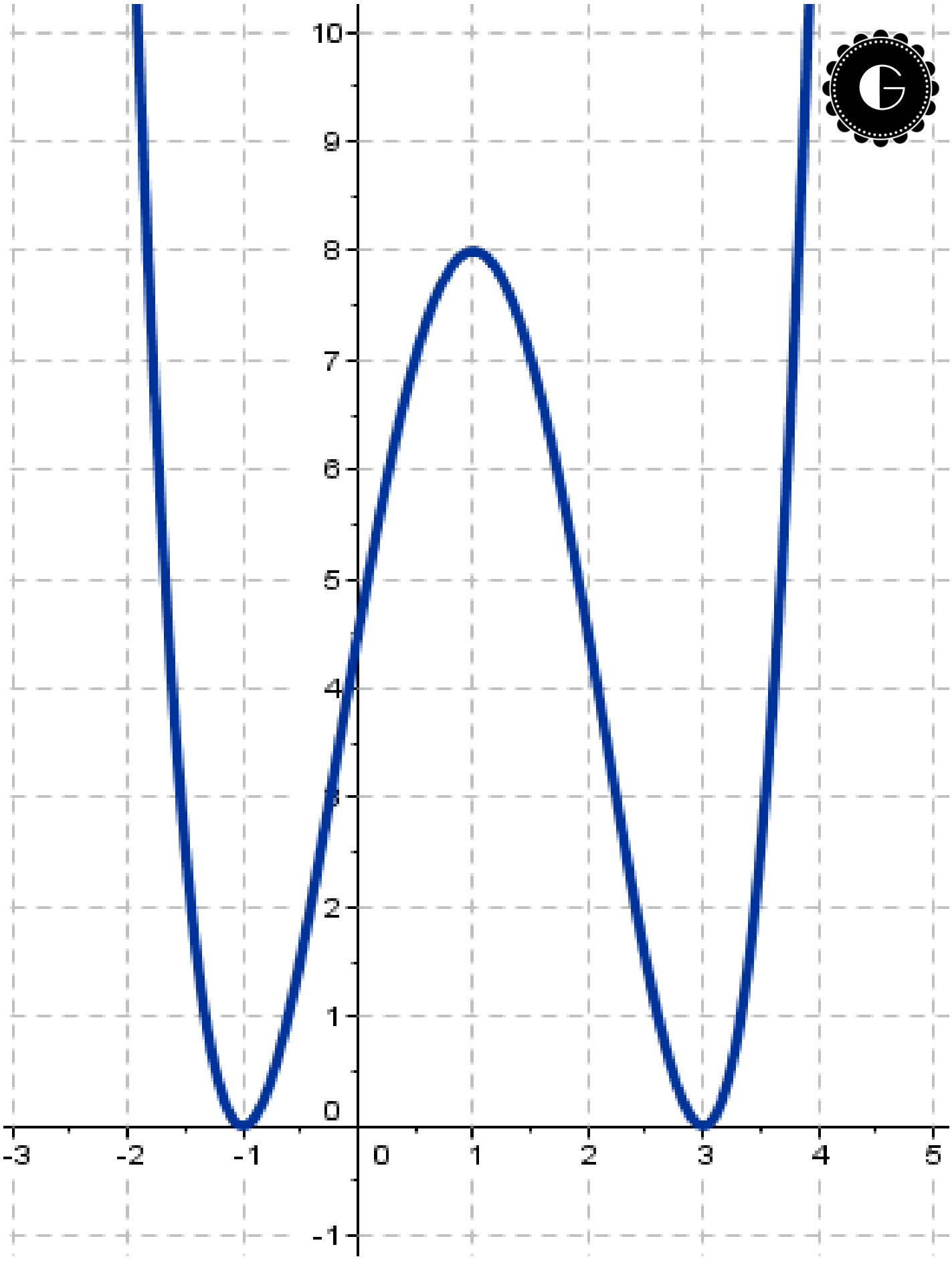
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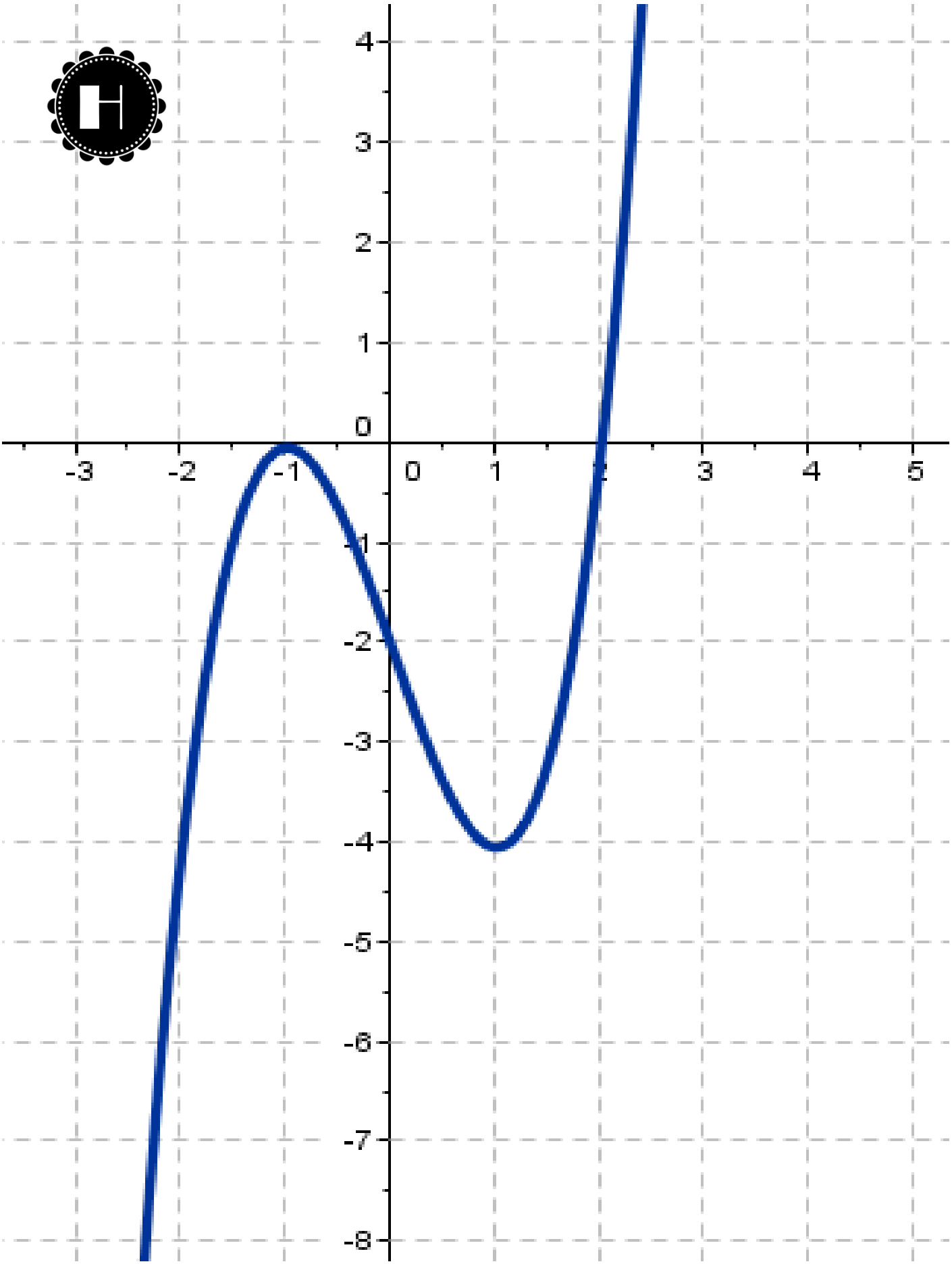
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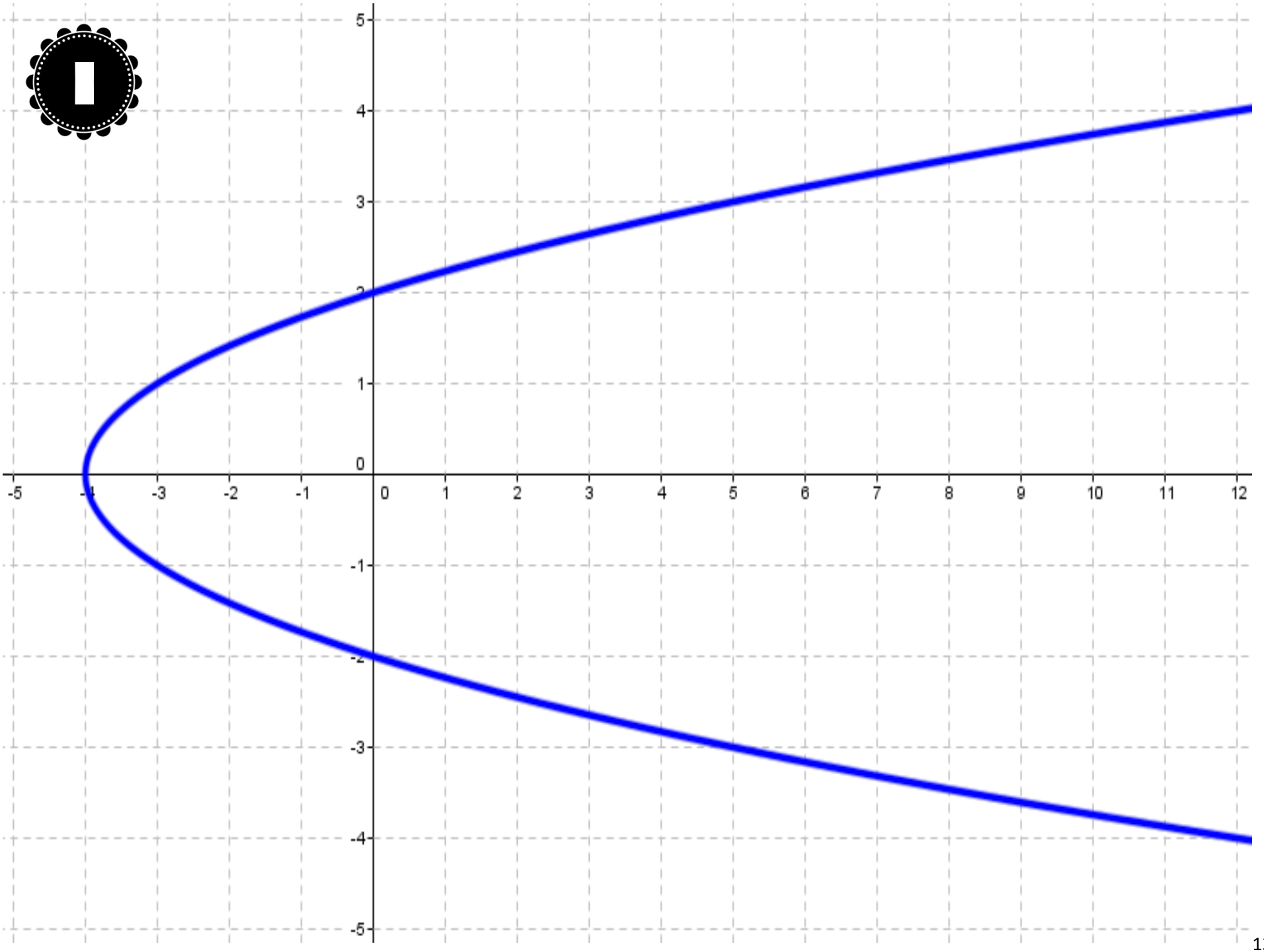
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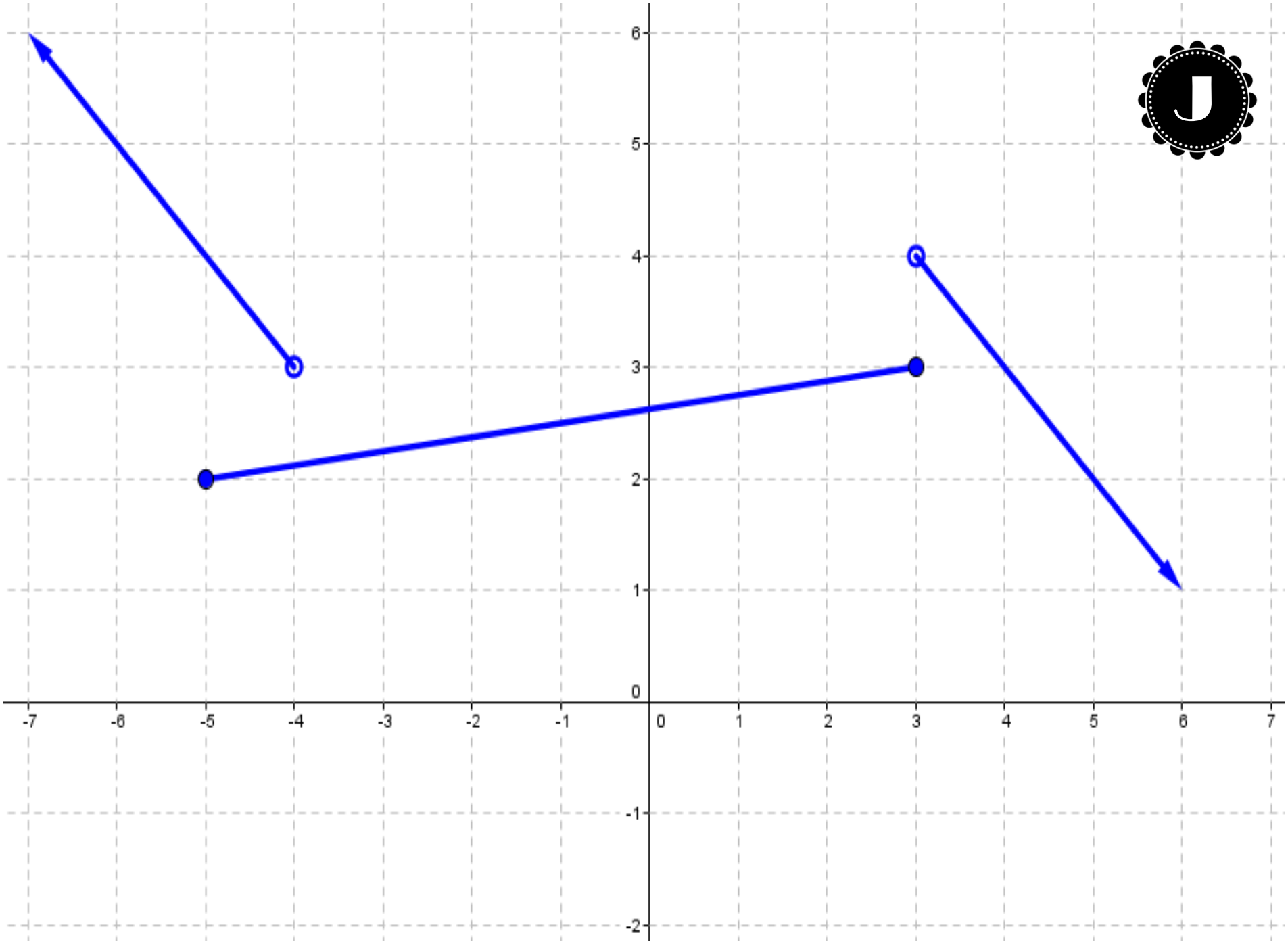
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1

Find the domain of each graph.

2

Find the range of each graph.

3

Find the x-intercepts of each graph.

4

Find the y-intercepts of each graph.

5

Find the extrema of each graph.

6

Determine the increasing intervals for each graph.

7

Determine the decreasing intervals for each graph.

8

Determine whether each graph represents a function.

9

Which graph(s) have a domain of $(-\infty,\infty)$?

10

Which graph(s) have a range of $(-\infty,\infty)$?

11

Which graph(s) have a domain and range of $(-\infty,\infty)$?

12

Which graph(s) have a range of $(-\infty,7]$?

13

Which graph(s) have a range of $[0,\infty)$?

14

Which graph(s) have a domain of $[0,\infty)$?

15

Which graph(s) have a domain of $[-4,\infty)$?

16

Which graph(s) have a domain of $[-2,4]$?

17

Which graph(s) have noninteger x-intercepts?

18

Which graph(s) have intercepts at (-2,0),(0,0) & (3,0)?

19

Which graph(s) have a y-intercept that is not visable on the graph.?

20

Which graph(s) have an intercept at (-1,0)?

21

Which graph(s) have an intercept at (0,-1)?

22

Which graph(s) have an intercept at (3,0)?

23

Which graph(s) have an intercept at (0,-2)?

24

Which graph(s) have an intercept at (0,0)?

25

Which graph(s) have a relative maximum at (3,0)?

26

Which graph(s) have a relative maximum at (1,8)?

27

Which graph(s) have extrema at (-1, 0) and (1,-4)?

28

Which graph(s) have a minimum at (3,0)?

29

Which graph(s) have a maximum at (3,4)?

30

Which graph(s) have a maximum at (-1.5,7)?

31

Which graph(s) have a minimum at (2,0)?

32

Which graph(s) have a minimum at approx. (1.9,-6.5)?

33

Which graph(s) are decreasing on the interval $(3,\infty)$?

34

Which graph(s) are increasing on the interval $(-\infty,\infty)$?

35

Which graph(s) are increasing on the intervals $(-\infty,-1)\cup(1,\infty)$?

36

Which graph(s) are decreasing on the intervals $(-\infty,-1)\cup(1,3)$?

37

Which graph(s) are decreasing on the interval $(-1,1)$?

38

Which graph(s) are decreasing on the interval $(1.5, 4.5)$?

39

Which graph(s) are increasing on the intervals $(-1, 0.9)\cup(2,\infty)$?

40

Which graph(s) are increasing on $(-\infty,3)$ & decreasing on $(3,\infty)$?

41

Which graphs represent functions?

42

Which graphs do not represent functions?

43

Which graph(s) have the following end behavior:

as $x \to \infty$, $f(x) \to \infty$ &

as $x \to -\infty$, $f(x) \to \infty$?

44

Which graph(s) have the following end behavior:

as $x \to \infty$, $f(x) \to -\infty$ &

as $x \to -\infty$, $f(x) \to \infty$?

45

Which graph(s) have the following end behavior:

as $x \to \infty$, $f(x) \to -\infty$ &

as $x \to -\infty$, $f(x) \to -\infty$?

46

Which graph(s) have the following end behavior:

as $x \to \infty$, $f(x) \to \infty$ &

as $x \to -\infty$, $f(x) \to -\infty$?

Answer Key

Cards 1-8

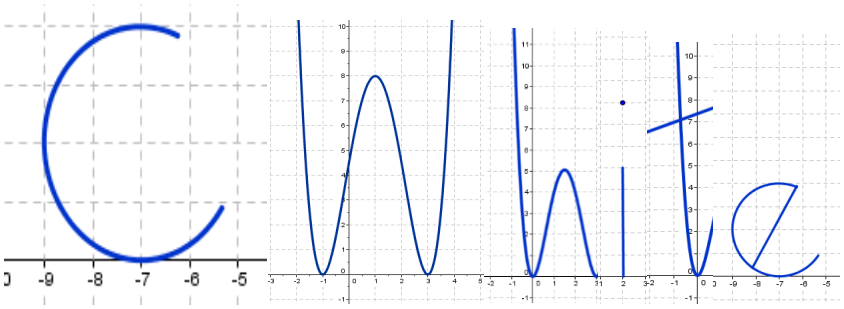
1. Domain A) [-2,4] B) (-∞,∞) C) (-∞,∞) D) (-∞,∞) E) (-∞,∞) F) (-∞,∞) G) (-∞,∞) H) (-∞,∞) I) [-4, ∞) J) (-∞,∞)	**2. Range** A) [-2,4] B) [6.9, ∞) C) (-∞, 7] D) (-∞,∞) E) (-∞,4] F) (-∞,∞) G) [0, ∞) H) (-∞,∞) I) (-∞,∞) J) (-∞,∞)	**3. X-intercept** A) Approx. (1.8,0), (3.8,0) B) (1.5,0), (0,0), (2,0) C) (-2,0), (0,0), (3,0) D) (1,0), (0,0), (5,0) E) (1,0), (5,0) F) (1,0) G) (-1,0) , (3,0) H) (-1,0), (2,0) I) (-4,0) J) (7,0)
4. Y-intercept A) Approx (0, -1.9), (0, 3.8) B) (0, 0) C) (0, 0) D) Cannot be seen on graph E) (0, -5) F) (0, -1) G) Approx (0, 4.5) H) (0, -2) I) (0, 2), (0, -2) J) Approx (0, 2.7)	**5. Extrema (relative & absolute)** A) None B) Maximum at (0.9, 4) Minimum at (-1, -6.9) ,(2,0) C) Maximum at (-1.5, 7), (3,0) Minimum at (1.9, - 6.5) D) Maximum at (1.5, 6) Minimum at (4.5, -6) E) Maximum at (3,4) Minimum – None F) None G) Maximum at (1, 8) Minimum at (-1, 0), (3,0) H) Maximum at (-1,0) Minimum at (1, -4) I) None J) None	**6. Increasing Interval** A) None – not a function B) (-1, 0.9)U (2, ∞) C) (-∞, -1.5) U (1.9, 3) D) (-∞, 1.5) U (4.5, ∞) E) (-∞, 3) F) (-∞, ∞) G) (-1,1) U(3, ∞) H) (-∞,-1) U (1, ∞) I) None – not a function J) None – not a function
7. Decreasing Intervals A) None – not a function B) (-∞, -1)U(0.9, 2) C) (-1.5, 1.9)U(3, ∞) D) (1.5, 4.5) E) (3, ∞) F) Never decreasing G) (-∞, -1)U(1, 3) H) (-1, 1) I) None – not a function J) None – not a function	8. Is it a function? A) No B) Yes C) Yes D) Yes E) Yes F) Yes G) Yes H) Yes I) No J) No	

Answers for Task Cards 9-46

Domain and Range Cards 9. B,C,D,E,F,G,H,J 10. D,F,H,I,J 11. D,F,H,J 12. C 13. G 14. None 15. I 16. A	Extrema 25. C 26. G 27. H 28.G 29. E 30. C 31. B 32. C	Functions 41. B,C,D,E,F,G,H 42. A, I , J End Behavior 43. B,G 44. None 45. C,E 46. D,F,H
x- and y- Intercepts 17. A, B (has 1) 18. C 19. D 20. G, H 21. F 22. C, D, G 23. I, H 24. C, B	Increasing and Decreasing Intervals 33. C 34. F 35. H 36. G 37. H 38. D 39. B 40. E	

Credits Page

All graphs were designed by Caryn White



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