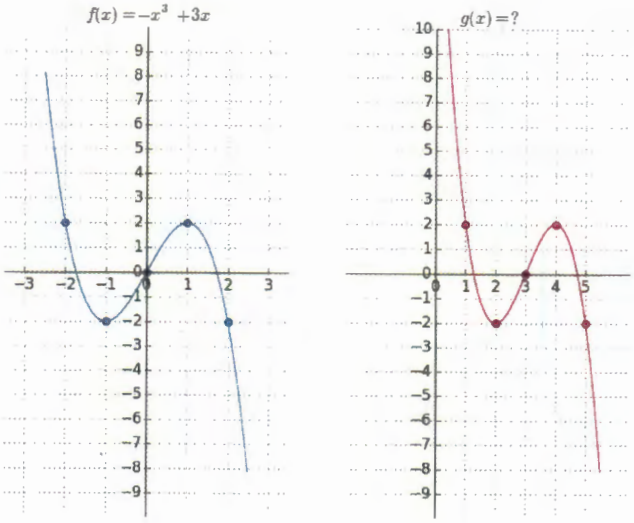
Problem 1: **Given the graph of the function f(x) = -x^3 + 3x; find a formula for g(x).**

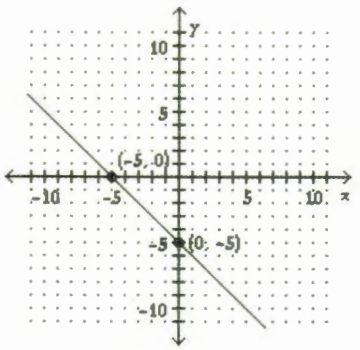


Problem 2: **Determine algebraically whether the function is even, odd, or neither even nor odd.**

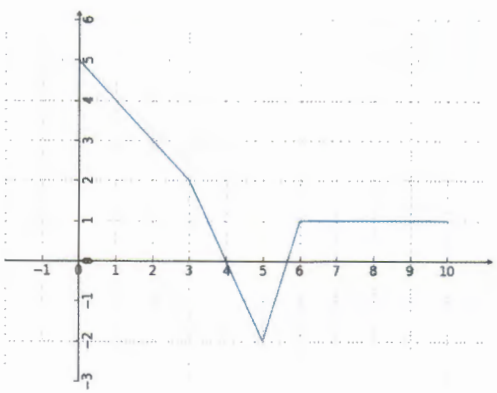
$$f(x) = -2x^3 - 7x$$

Problem 3: **Find the zero of the function:** f(x) = -5x + 15

Problem 4: **Find the equation of the line:**



Problem 5: **Determine the intervals on which the function is increasing, decreasing, and constant.**



A) Increasing on (5,10); Decreasing on (0,5)
B) Increasing on (5,10); Decreasing on 0,5); Constant on (10,∞)
C) Increasing on (5,6); Decreasing on (0, 5); Constant on (6,10)
D) Increasing on (-2,1); Decreasing on (-2,5); Constant on (6,10)

Problem 6: **Solve:** $|x - 1| = -1$

Problem 7: **The point (-4,5) is on the graph of y=f(x). Find the corresponding point on the graph of** $g(x) = 2f\left(\frac{x}{2}\right)$.

Problem 8: **Solve the equation: |2x+3| = |x-1|.**

The following statement is used to solve Problem 9 and Problem 10 (see Section 2.5). You will need a calculator that performs linear regression.

Ten students in a graduate program were randomly selected. Their grade point averages (GPAs) when they entered the program were between 3.5 and 4.0. The following data were obtained regarding their GPAs on entering the program versus their current GPAs.

Entering GPA	Current GPA
3.5	3.6
3.7	3.7
3.6	3.9
3.6	3.8
3.5	3.9
3.9	3.6
4.0	3.7
3.9	3.9
3.8	3.8
3.7	4.0
3.8	3.5

Problem 9: **Use linear regression to find a linear function that predicts a student's current GPA as a function of his or her entering GPA.**

Problem 10: **Assume that the current GPA of a student is 3.75. Could you estimate the entering GPA of that student?**

Problem 11: Find the real solution.

$$4 - (5t + 3)^2 = 3$$