PS 1 Due 11/10/2021
Honor Code Certification:

Your signature_____

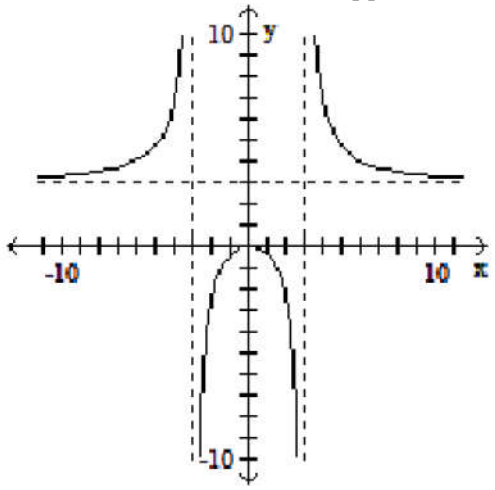
Show your steps. and work on another piece of paper. Unless otherwise indicated: Each question is scored: 2 points for the correct answer; 3 points for the correct work. Partial credit may be awarded.

Solve.

1) $|4x - 1| \geq 6$

2)

Write a rational function that approximates the graph below. Make sure to show your explanation:



Find the y intercept (algebraically) the leading term, leading coefficent, the degree and the correct end behavior diagram for the given polynomial function.

3) $f(x) = + 5x^2 - 3x + 9 + 8x^3$

Find the equation of the line in point–slope form of the line satisfying the given conditions.

4) through (–2, –8) and (–3, 9)

Find the sum.

5) $1 + 2 + 3 + \ldots + 363$

Use the given zero to find all zeros of the function.

6) $f(x) = x^3 - 3x^2 - 5x + 39$; zero: –3

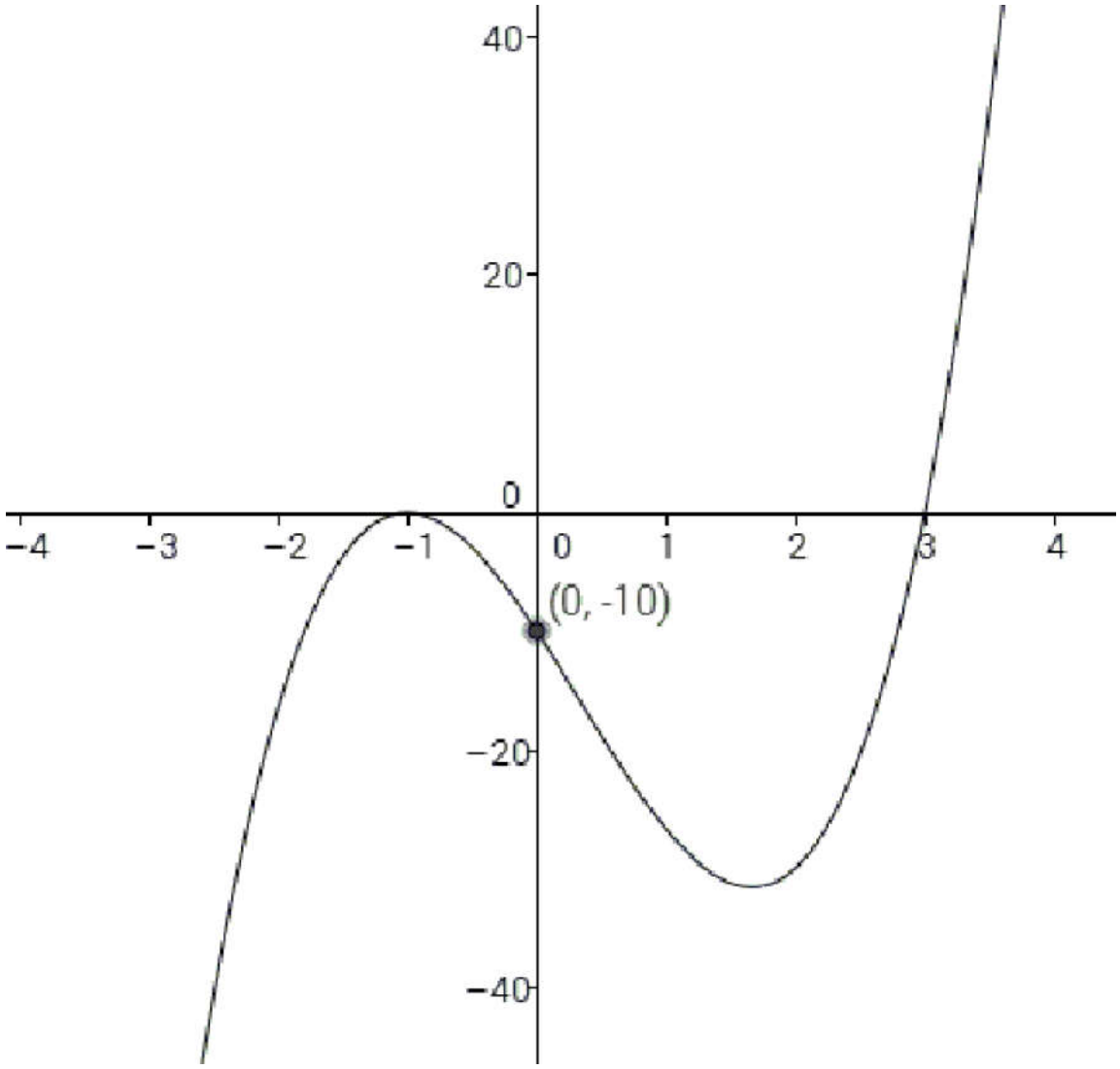
10 point problem.

7) Jimmy Cricket is perched on a reed. It hops off the reed. During its hop, its height is given by the equation $h = -0.2x^2 + 1.75x + 7$, where x is the distance in inches from the base of the reed, and h is in inches.

a. How high on the reed is the cricket?
b. When does it land on the ground?
c. When does it reach its maximum height and how high is it?

8)

Write a polynomial function for the graph below. Don't forget to find "a"



9)

Find the domain of this function. Use the number line analysis:

$$n(x)=\sqrt{(x-3)(x+2)^2}$$