

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.

Write an equation in point-slope $y - y_1 = m(x - x_1)$ form

1) The line through (3, 3), parallel to $y = -\frac{3}{4}x + 1$

Find the specified domain.

2) For $f(x) = 2x - 5$ and $g(x) = \sqrt{x + 4}$, what is the domain of f/g ?

Solve the problem.

3) The enrollment of the district was 1107 last year and is 1300 this year. Calculate the relative percentage change to the nearest percent.

Perform the indicated operations. Write the result using only positive exponents. Assume all variables represent nonzero real numbers.

4) $(4x^{-5})^2(x^4)^{-3}$

Solve using the elimination method. Check your answer.

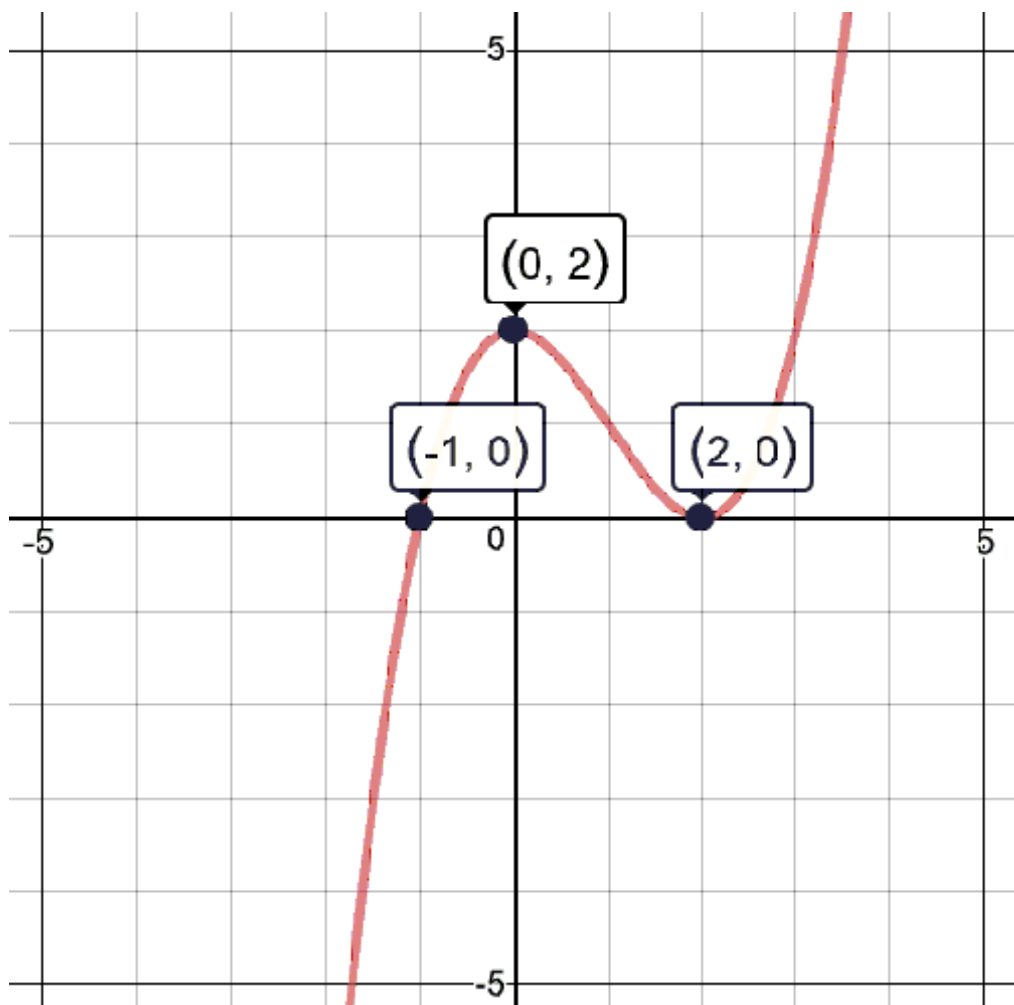
5) $x - 5y = 16$
 $5x - 6y = 42$

Given the polynomial function $f(x)$, find the rational zeros, then the other zeros (that is, solve the equation $f(x) = 0$), and factor $f(x)$ into linear factors.

6) $f(x) = x^3 - 8x^2 + 10x + 12$

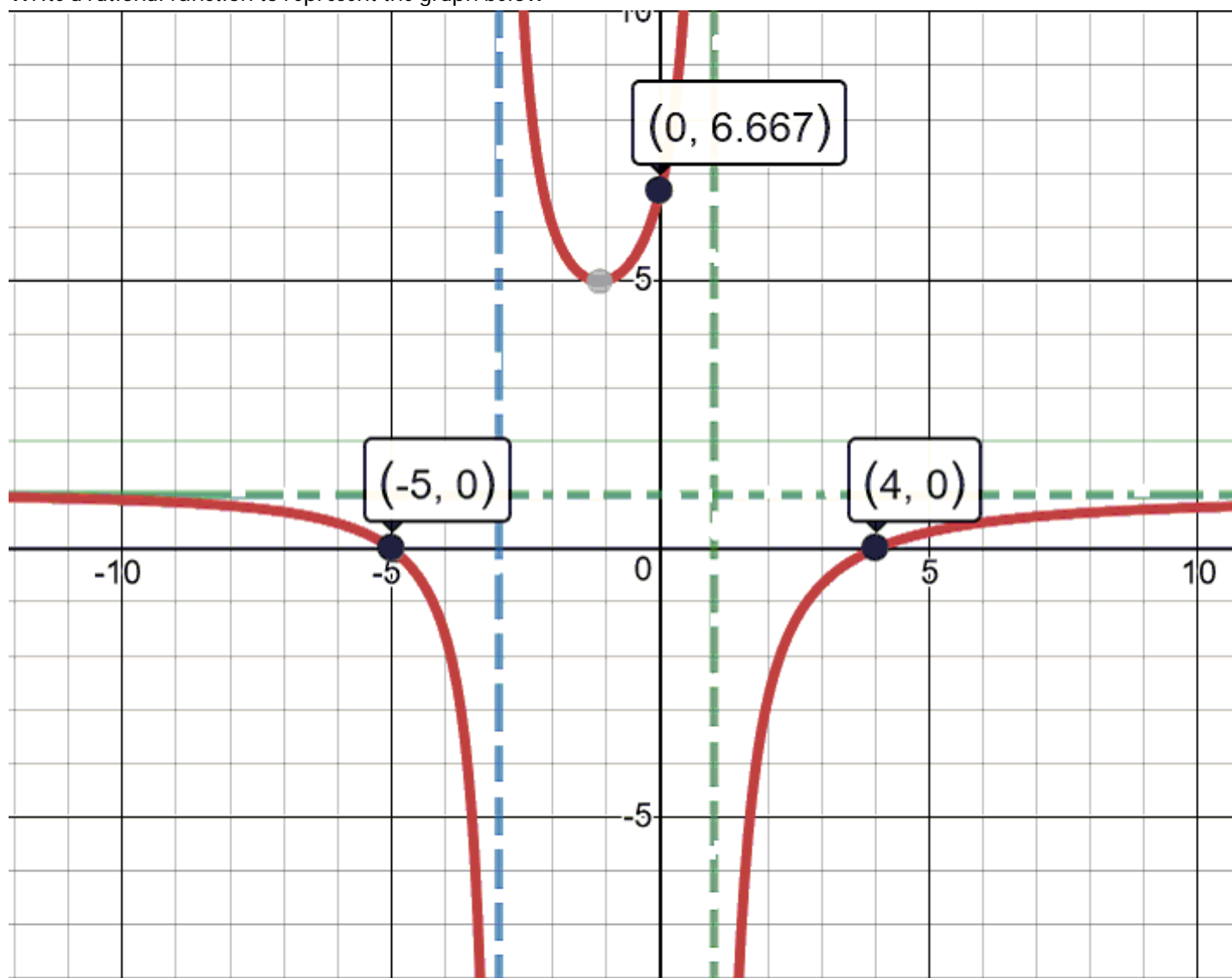
Using the graph, determine any relative maxima or minima of the function and the intervals on which the function is increasing or decreasing. Then write a polynomial function to represent the graph shown (10 points)

7)



8)

Write a rational function to represent the graph below



Solve.

9) $5x^3 - 14x^2 \leq 24x$

Answer Key

Testname: PS 8 FALL 2016

1) $3x + 4y = 21$

2) $(-4, \infty)$

3) 17%

4) $\frac{4^2}{x^{22}}$

5) $(6, -2)$

6) $6, 1 + \sqrt{3}, 1 - \sqrt{3}$; $f(x) = (x - 6)(x - 1 - \sqrt{3})(x - 1 + \sqrt{3})$

7) relative maximum: 1 at $x = 0$; relative minimum: -3 at $x = 2$; increasing $(-\infty, 0)$, $(2, \infty)$; decreasing $(0, 2)$

8)

9) $\left(-\infty, -\frac{6}{5}\right] \cup [0, 4]$