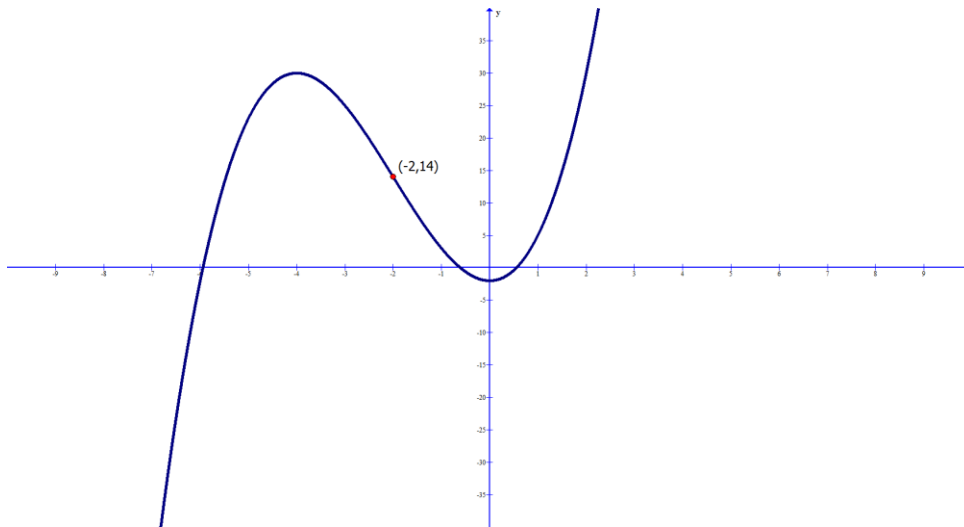


Section 3.3 Concavity and the Second Derivative Test
(Minimum Homework: 1 – 24 odds)

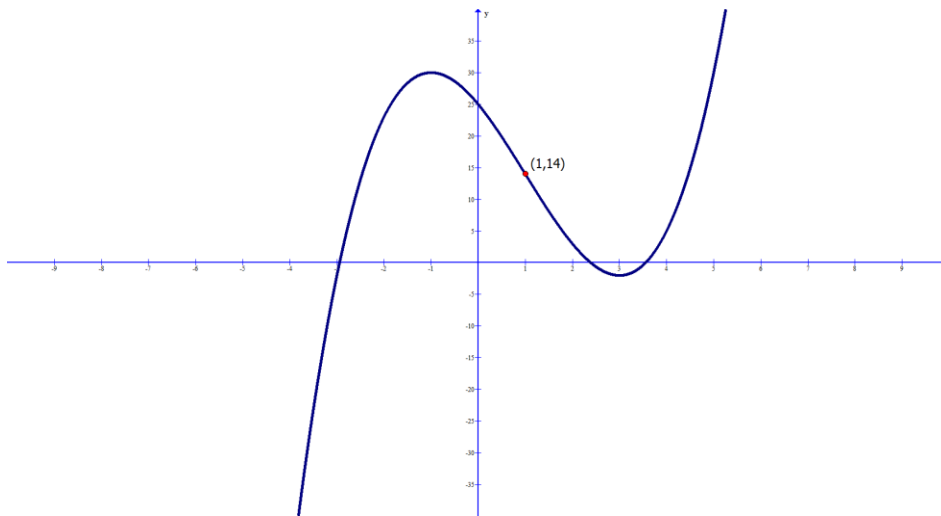
#1-14:

- a) Find the open interval(s) where the graph of the function is concave up
- b) Find the open interval(s) where the graph of the function is concave down.
- c) Find all inflection points

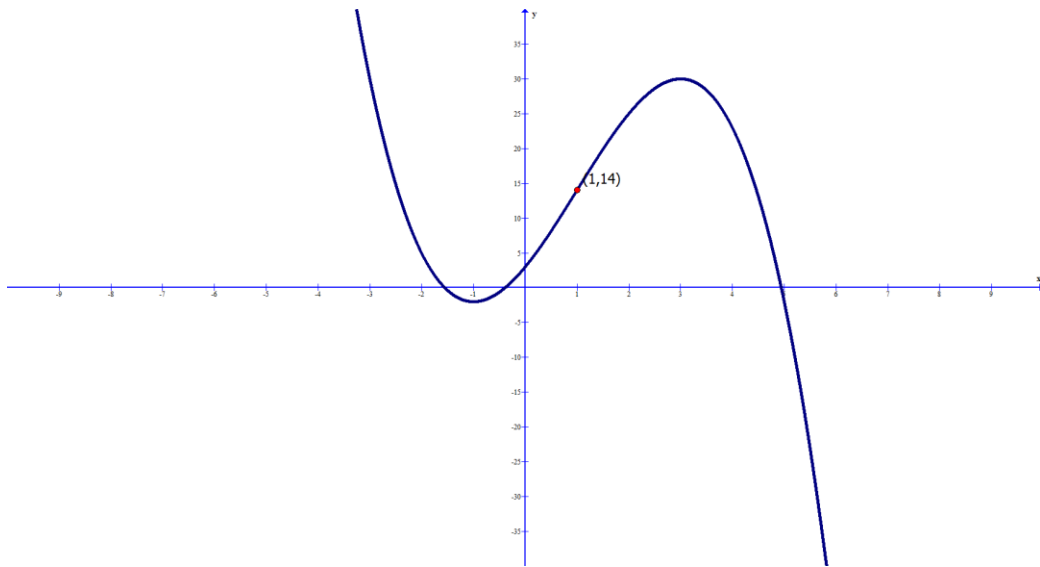
1)



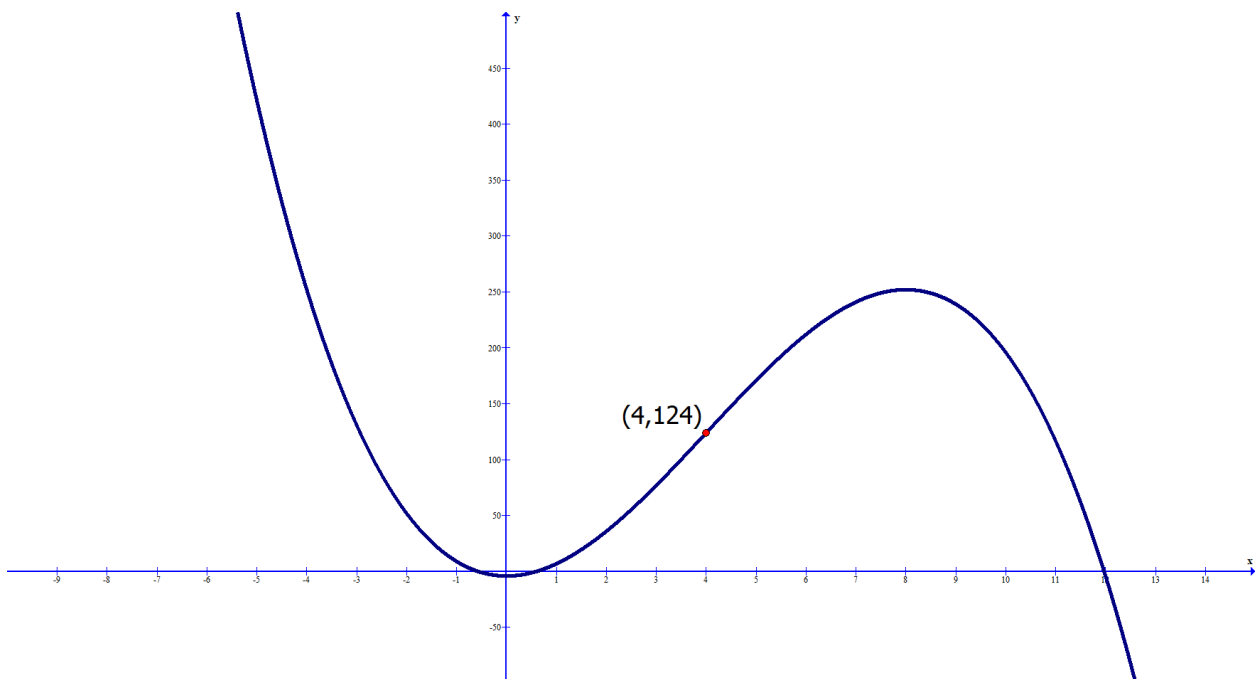
2)



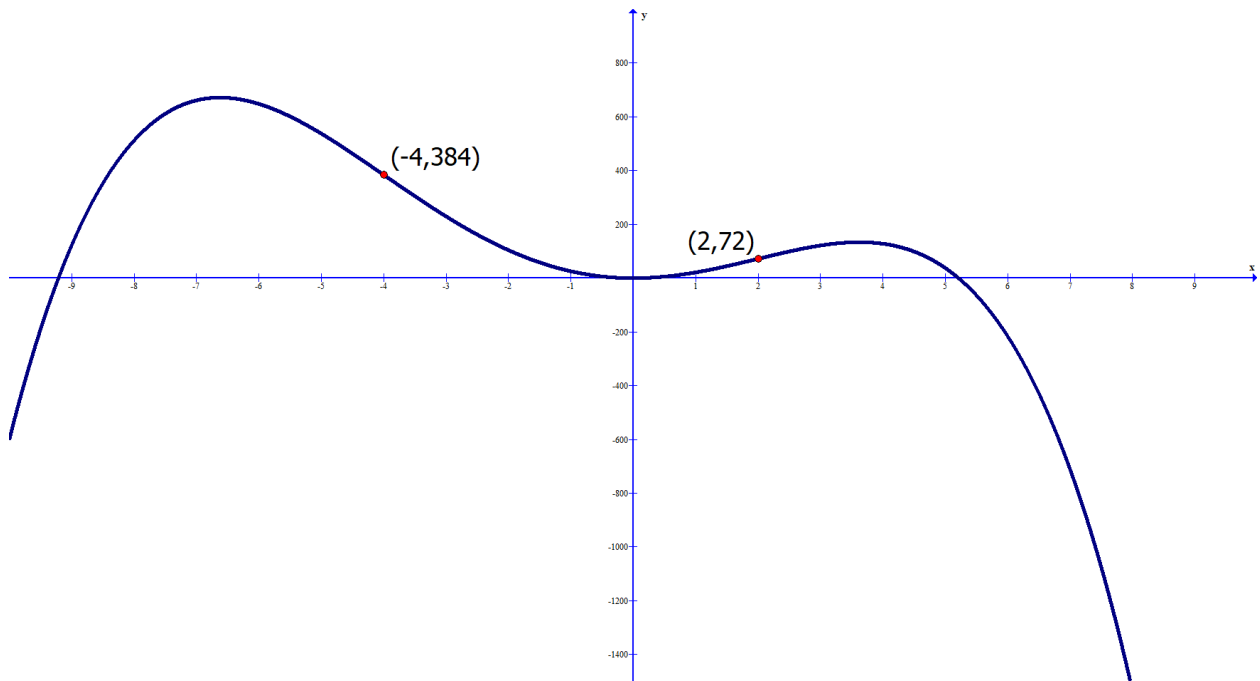
3)



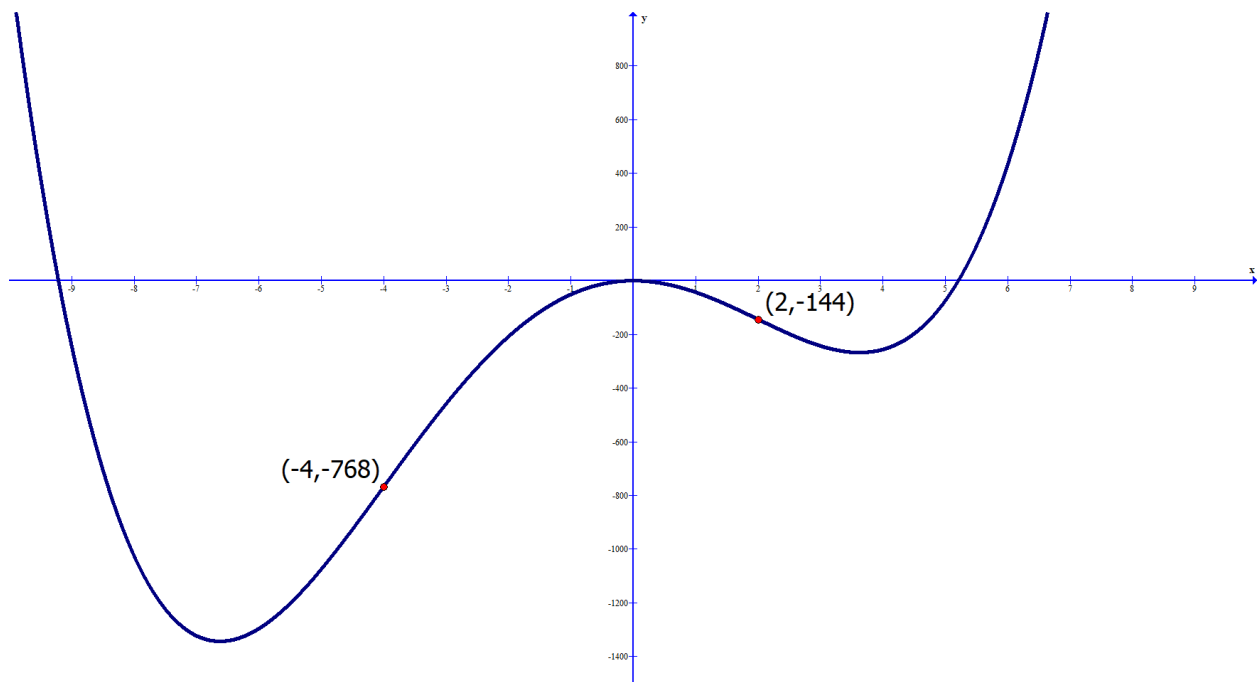
4)



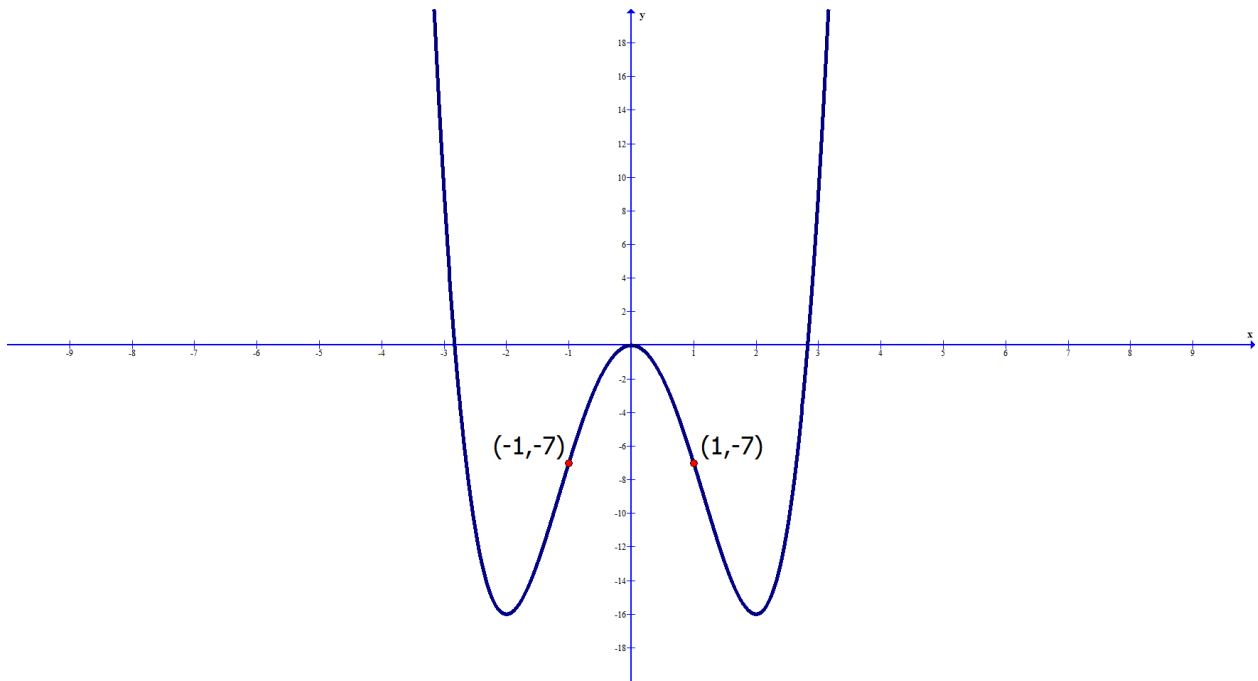
5)



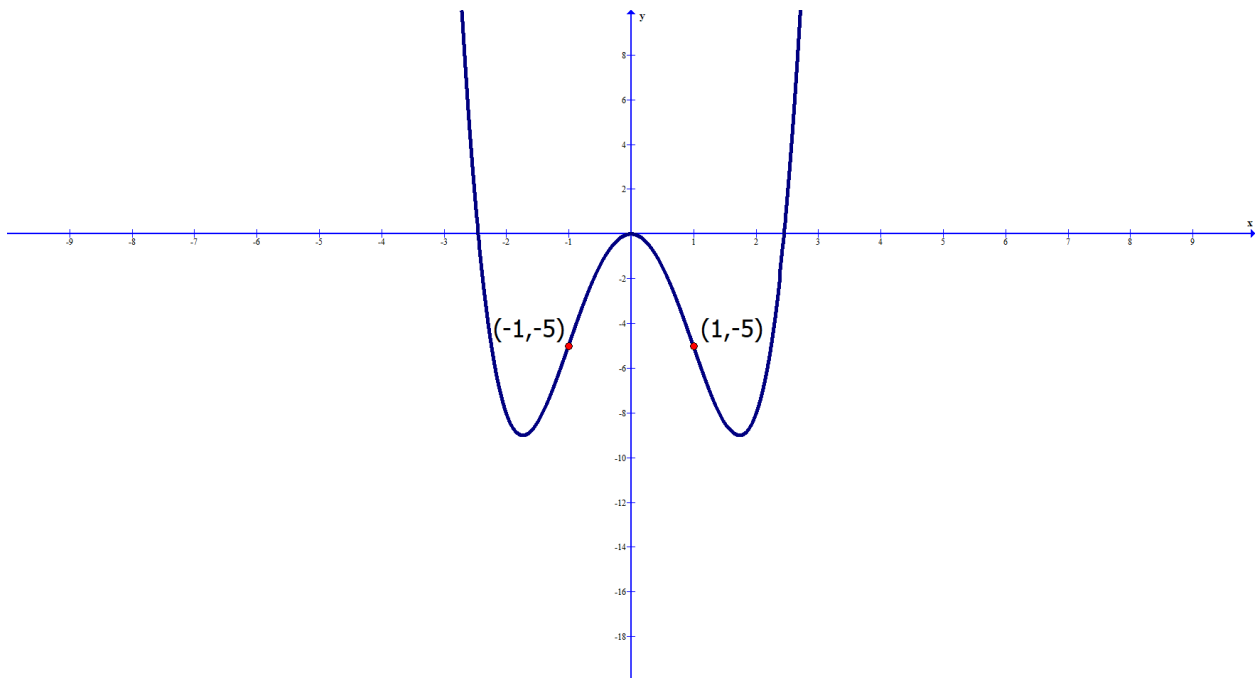
6)



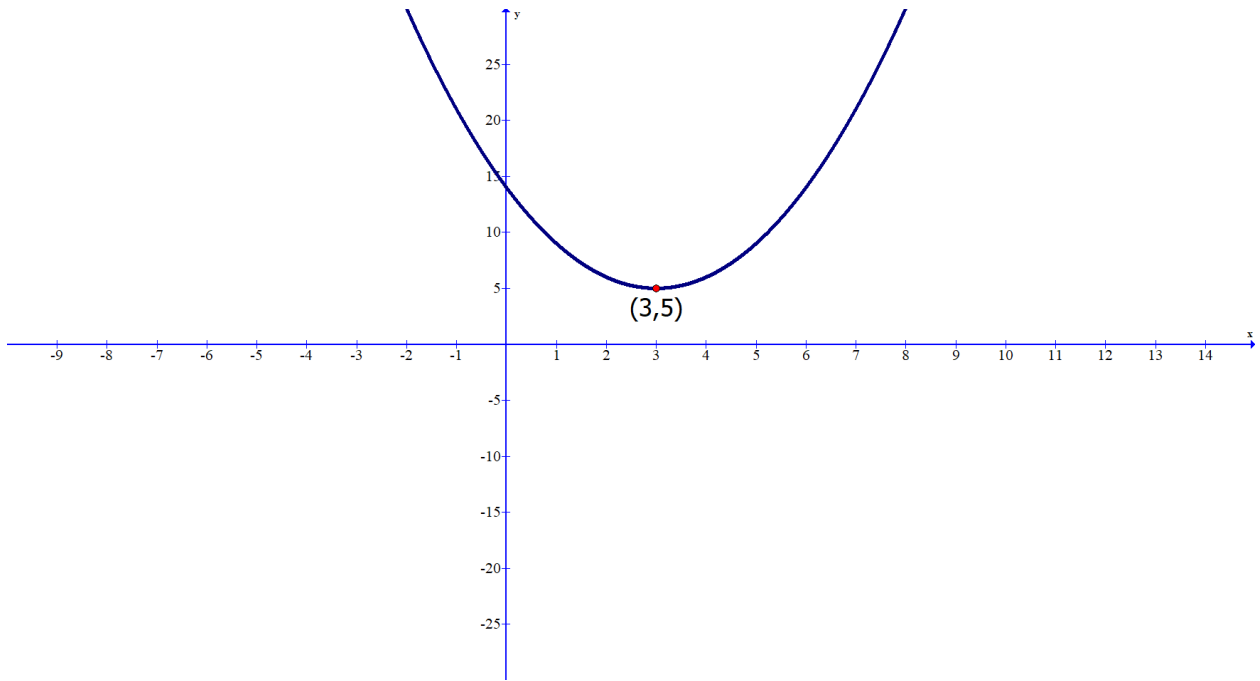
7)



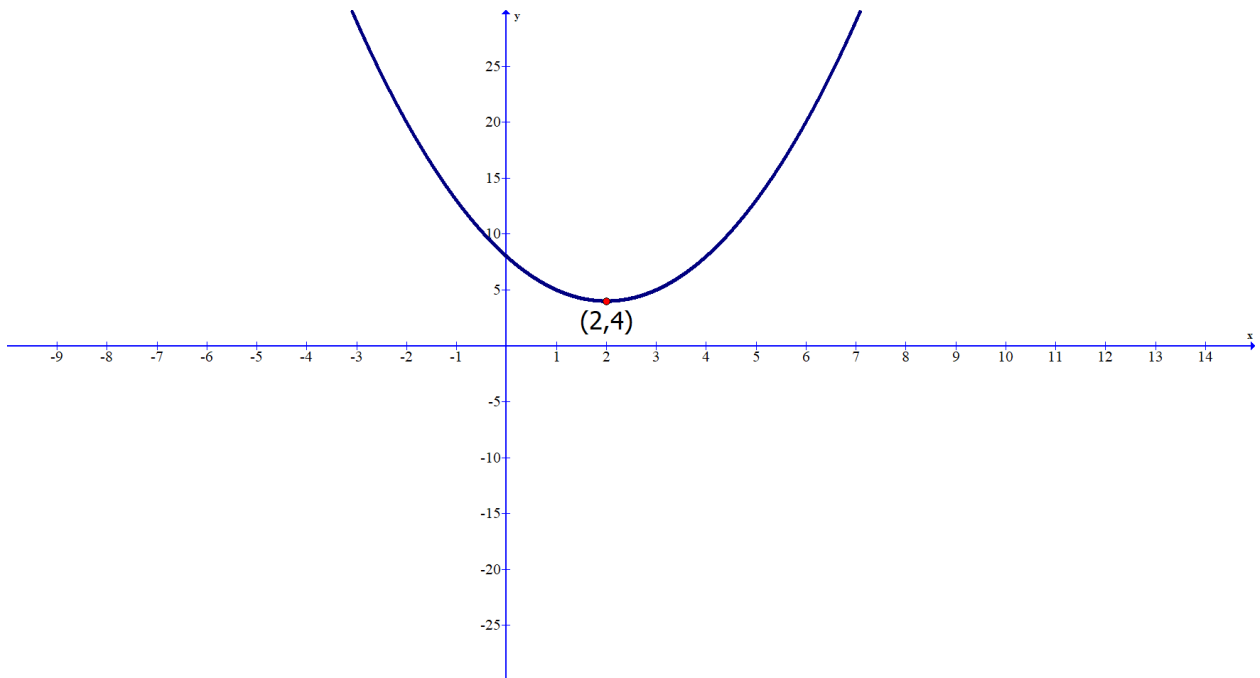
8)



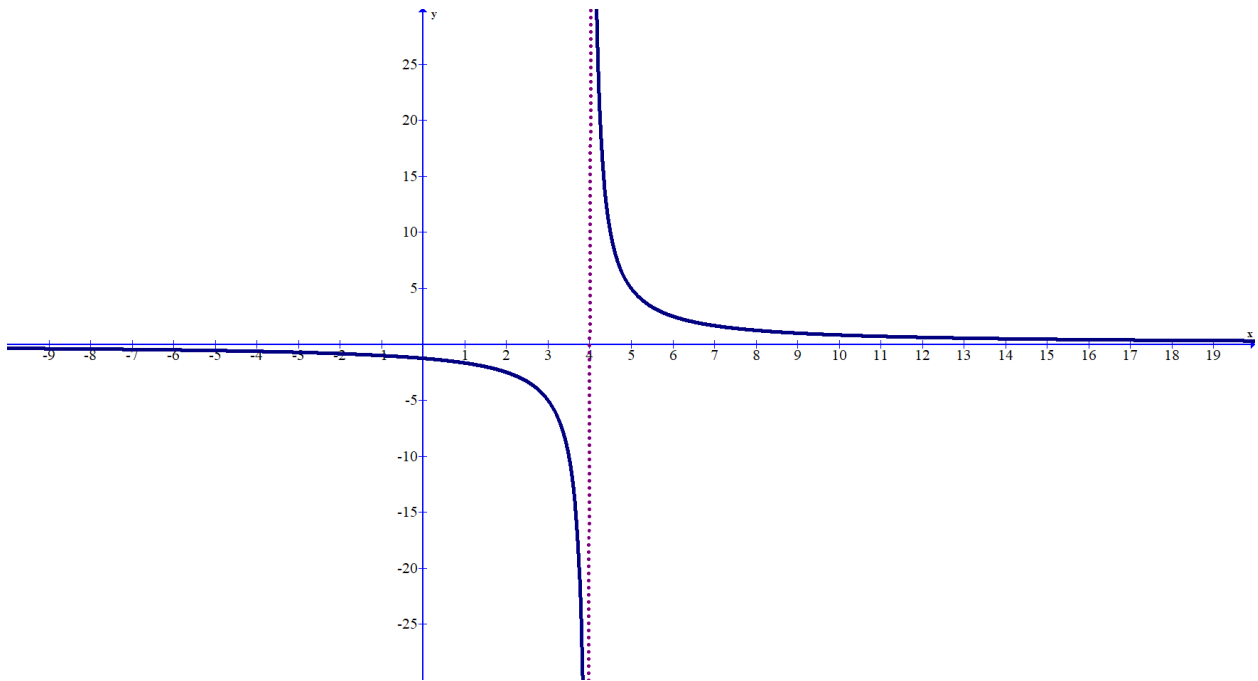
9)



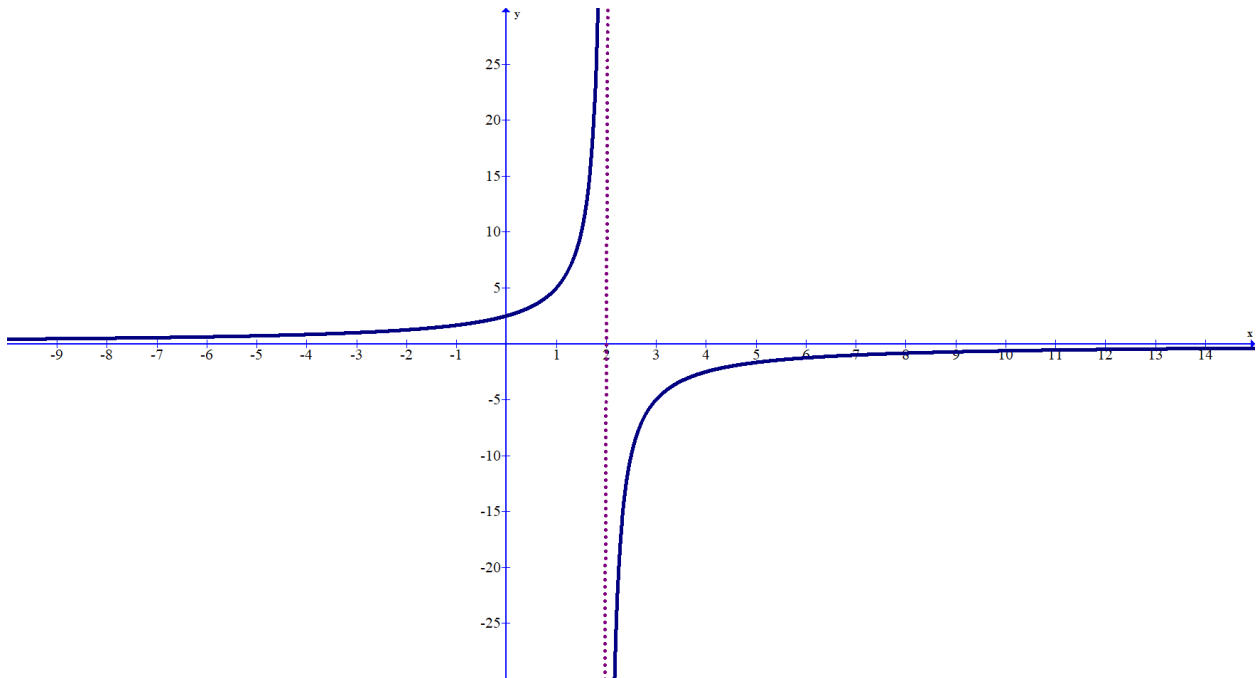
10)



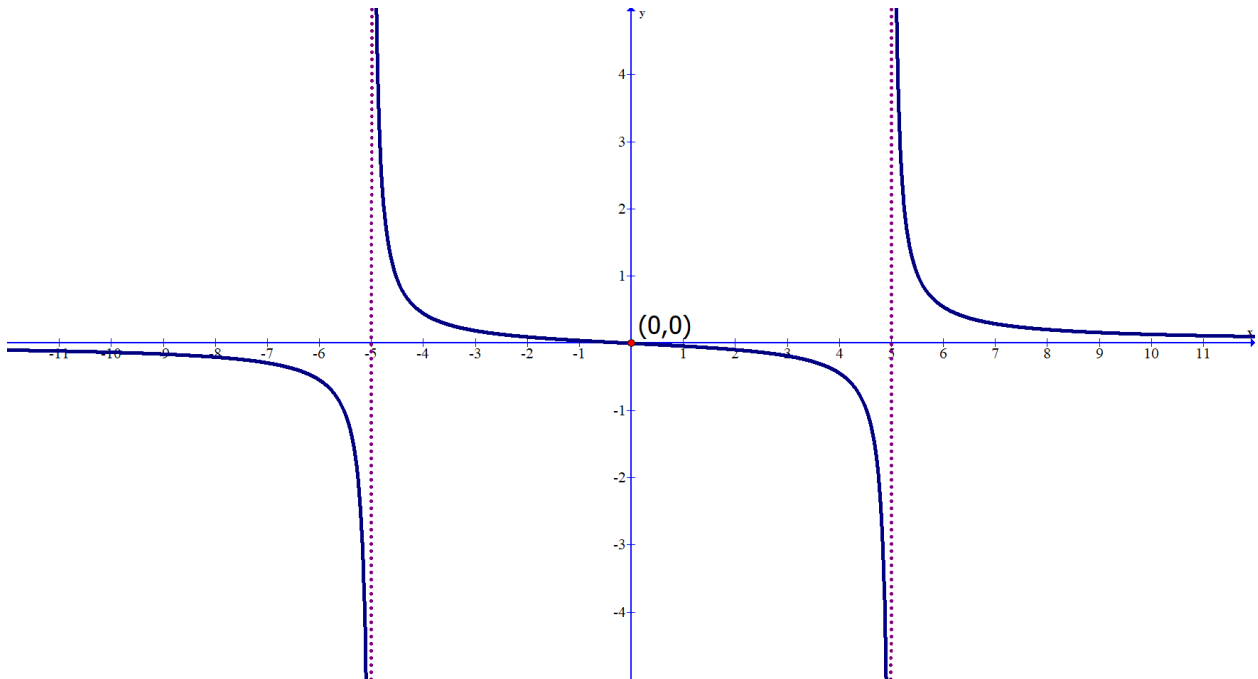
11)



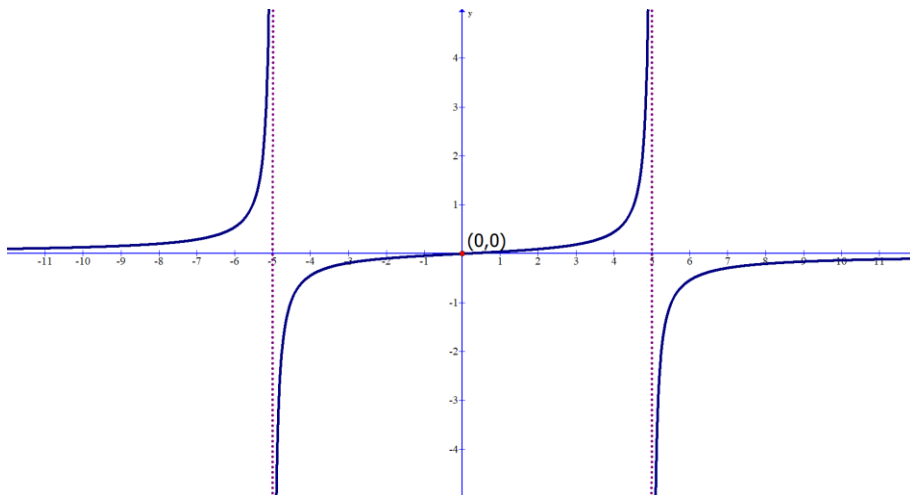
12)



13)



14)



#15-24:

- a) Find the open interval(s) where the graph of the function is concave up
- b) Find the open interval(s) where the graph of the function is concave down.
- c) Find all inflection points

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

16) $f(x) = 2x^3 - 6x^2 + 5$

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

18) $f(x) = -2x^3 - 6x^2 + 5$

19) $f(x) = x^4 - 6x^2 + 4$

20) $f(x) = x^4 - 6x^2 - 3$

21) $f(x) = 2xe^x$

22) $f(x) = 3xe^x$

23) $f(x) = \frac{2}{x-5}$

Hint $f''(x) = \frac{4}{(x-5)^3}$

24) $f(x) = \frac{5}{x+1}$

Hint: $f''(x) = \frac{10}{(x+1)^3}$