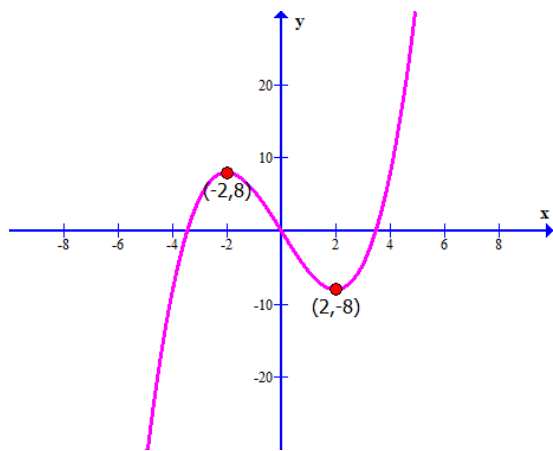


Section 3.1 Increasing and Decreasing functions and Relative Maxima and Minima
(Minimum Homework: 1 – 11 odds 13, 17, 21, 25)

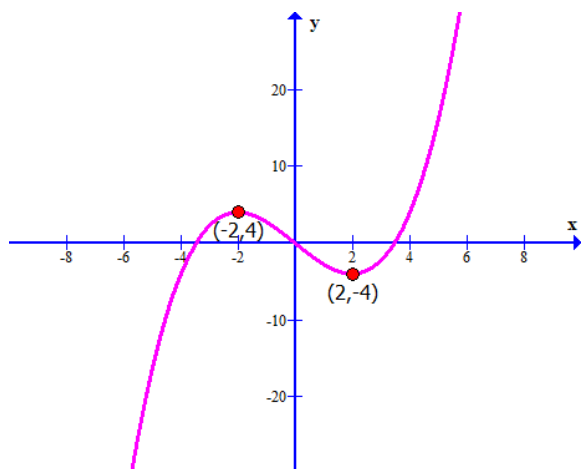
1-12: Find:

- interval(s) where the graph is increasing.
- interval(s) where the graph is decreasing.
- the coordinates of relative maximum point if any
- the relative maximum value
- the coordinates of the relative minimum point if any
- the relative minimum value

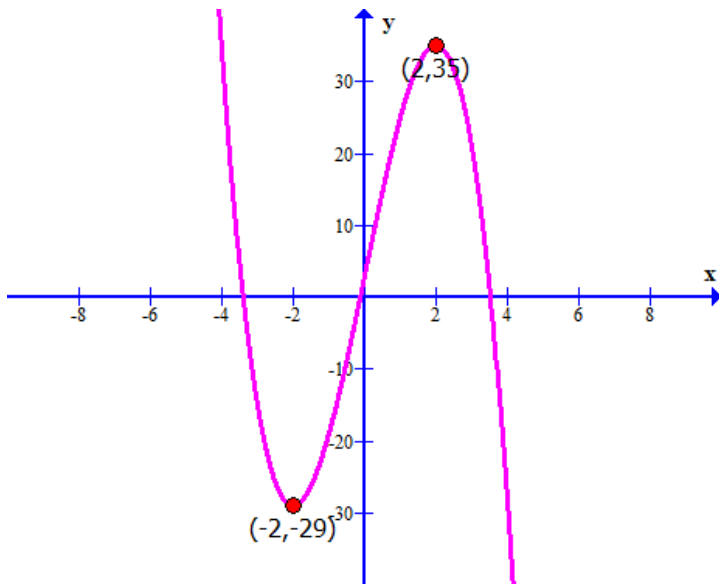
1)



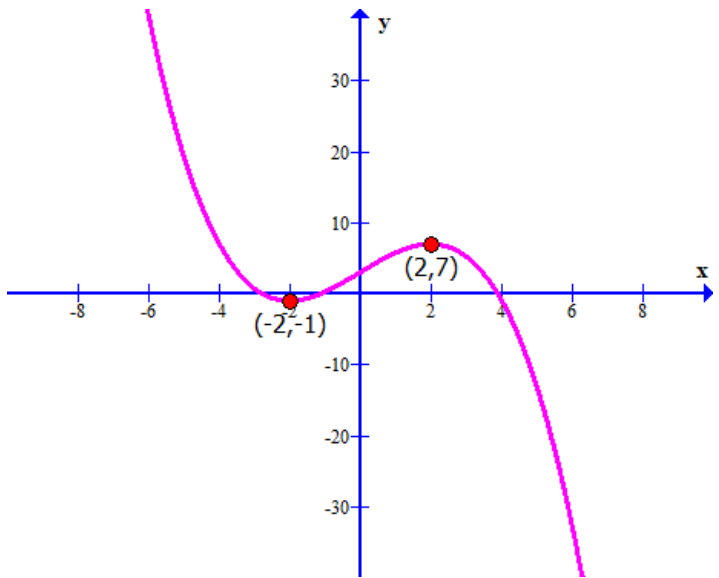
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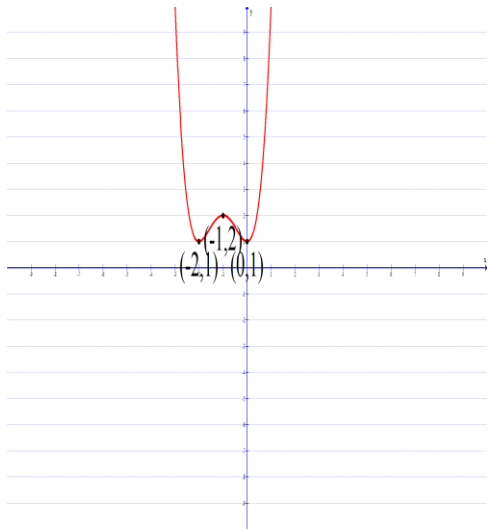
3)



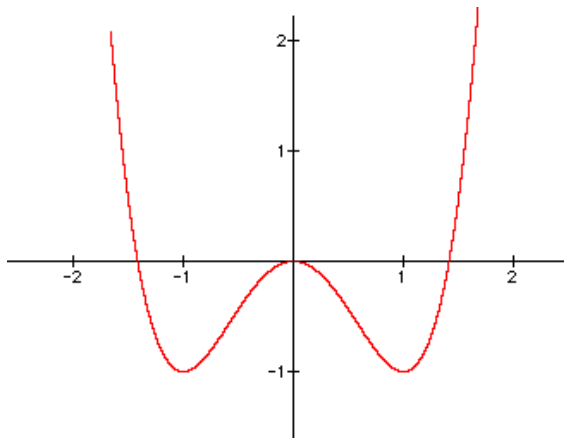
4)



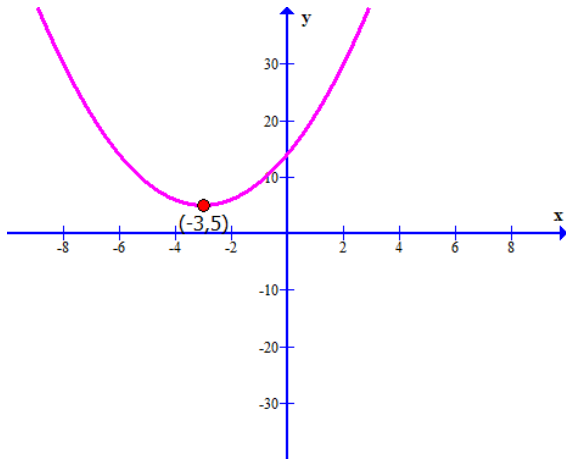
5)



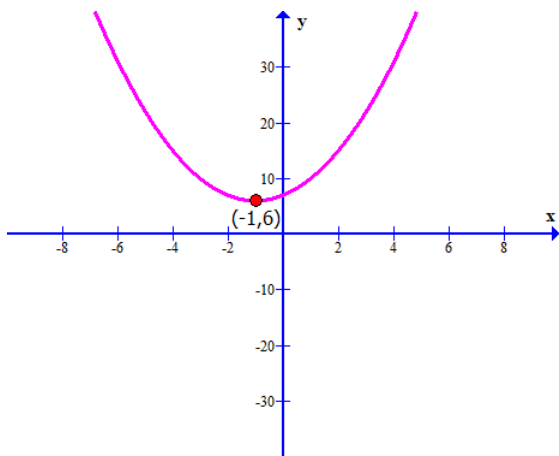
6)



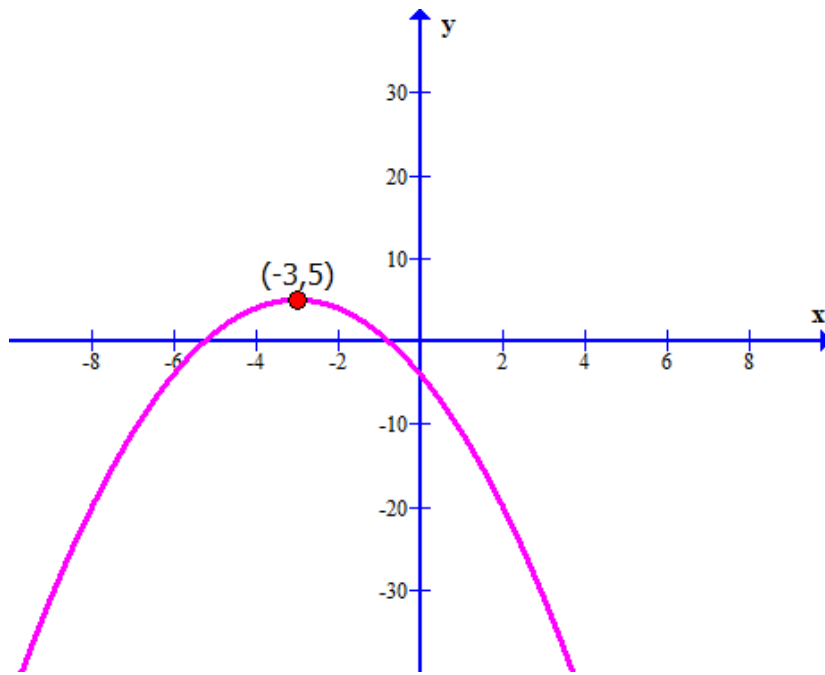
7)



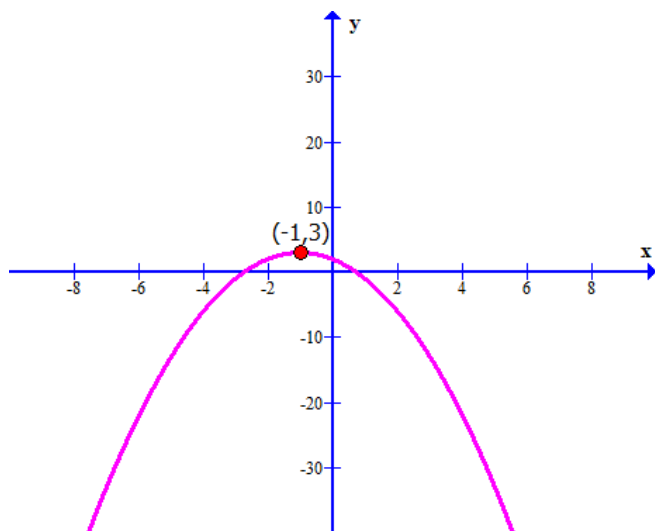
8)



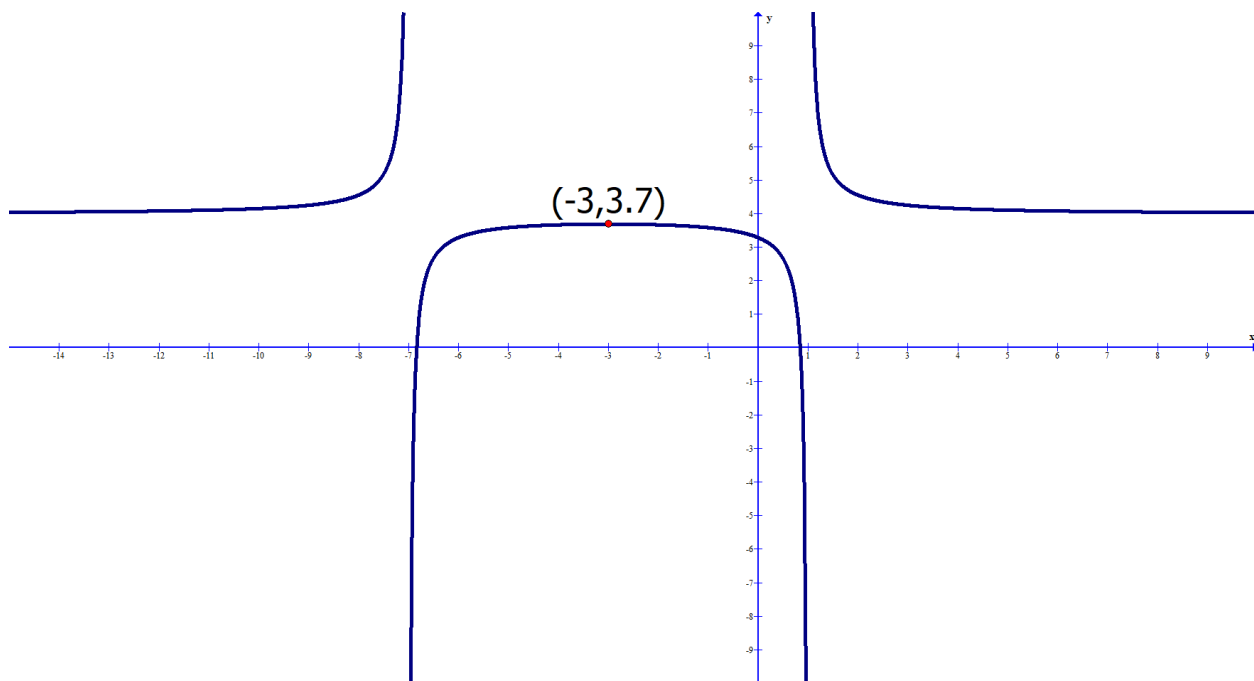
9)



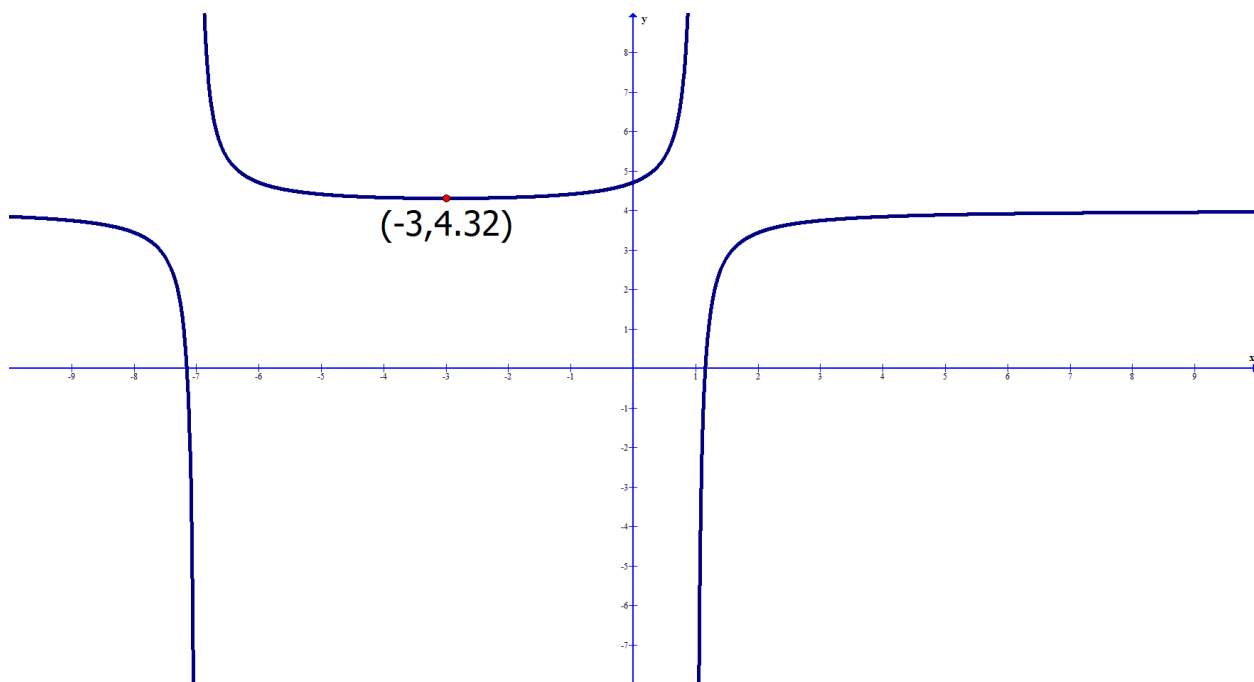
10)



11)



12)



(Minimum Homework: 1 – 11 odds 13, 17, 21, 25)

#13 – 26: For each function find the following:

- a) $f'(x)$
- b) the critical numbers
- c) interval(s) where the graph is increasing.
- d) interval(s) where the graph is decreasing.
- e) the coordinates of relative maximum point if any
- f) the relative maximum value
- g) the coordinates of the relative minimum point if any
- h) the relative minimum value

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

14) $f(x) = 2x^2 - 8x + 1$

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

16) $f(x) = x^2 + 5$

17) $f(x) = x^3 - 12x + 4$

18) $f(x) = x^3 - 48x + 18$

19) $f(x) = -x^3 - 3x^2 + 45x - 5$

20) $f(x) = -x^3 - 6x^2 + 24x - 9$

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

22) $f(x) = \frac{x+3}{x-7}$

23) $f(x) = \frac{x-4}{x+1}$

24) $f(x) = \frac{x-6}{x+3}$

25) $f(x) = xe^{3x}$

26) $f(x) = xe^{2x}$