MA 223 Even Answers

Section 4.1

22) decreasing: $(-\infty,-1)\cup(0,1)$

increasing $(-1,0)\cup(1,\infty)$

24) decreasing: $(-\infty,-\frac{3}{2})\cup(-\frac{3}{2},\infty)$

26) decreasing: $(-\infty,-1)\cup(1,\infty)$

increasing: $(-1,1)$

30) decreasing on $(-\infty,5)$

increasing on $(5,\infty)$

34) decreasing: $(0,1)\cup(1,2)$

increasing: $(-\infty,0)\cup(2,\infty)$

60) relative maximum: $F(-2)=84$

relative minimum: $F(2)=-44$

64) no relative extrema

66) relative minimum: $g(10)=610$

74) increasing: $(0,4000)$

decreasing: $(4000,\infty)$

Section 4.2

10) b

12) c

22) concave downward: $(-\infty,\infty)$

26) concave upward: $(-\infty,0)\cup(1,\infty)$

concave downward: $(0,1)$

40) concave downward: $(-\infty,2)\cup(2,\infty)$

44) $(\frac{1}{2},\frac{1}{2})$

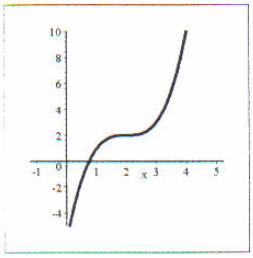
54) relative minimum: $(-\frac{3}{4},\frac{47}{8})$

56) relative maximum: $(-\sqrt{2},4\sqrt{2})$,

relative minimum: $(\sqrt{2},-4\sqrt{2})$

68) relative minimum: $f(0)=0$

70)



(or similar)

Section 4.3

12) horizontal: $y=0$,

vertical: $x=-2$

16) horizontal: $y=\frac{1}{2}$

vertical: $t=\frac{1}{2}$

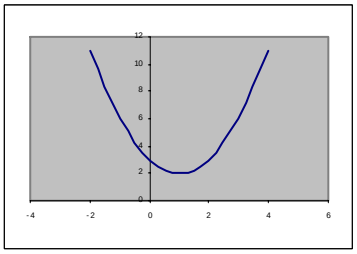
18) horizontal: none

vertical: none

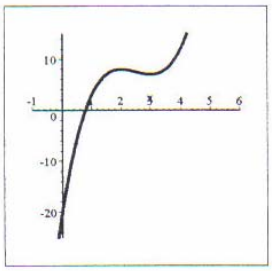
20) horizontal: none

vertical: $x=-2, x=2$

38)



42)



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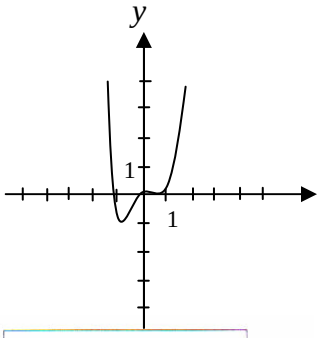

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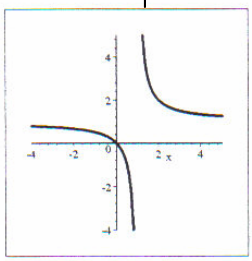
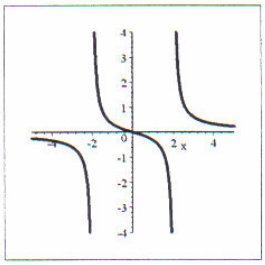
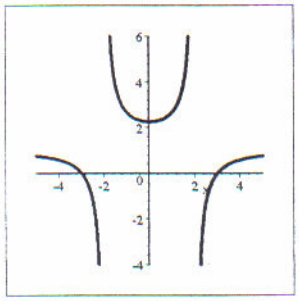


Section 4.3 (con't)

54)



56)



Section 4.4

16) absolute minimum: $g(1) = -4$

absolute maximum: $g(4) = 5$

18) absolute maximum: $f(3) = 9$

absolute minimum: $f(6) = -6$

20) absolute maximum: $g(1) = 3, g(-2) = 3$

absolute minimum: $g(-3) = -1, g(0) = -1$

56) 11:30 AM

Section 4.5

2) 500 yd. x 1500 yd.

A = 750,000 sq. yd.

4) $\frac{14}{3}$ in.by$\frac{35}{3}$ in. by $\frac{5}{3}$ in.

6) 6 in. by 6 in. by 3 in.

8) 2 ft. by 2 ft. by 5 ft.

10) 5 in. by 10 in.

16) 20 trees/acre

28) $r = \frac{440}{\pi} \approx 140.06$ ft.

$l =$ 440 ft. ,

$A =$ 184,874 sq ft