1.5 Nicole Blanch

2.) x intercept

4.) maximum

6.) odd function

8.) Domain: $(-1, \infty)$
range: $(7, \infty)$

a.) 4
b.) 3
c.) 5
d.) 0

10.) Domain: $(-\infty, \infty)$
range: $(-\infty, 2)$

a.) 3
b.) 0
c.) 1
d.) 3

12.) no

14.) yes

24.) $4x^3 - 24x^2 - x + 6 = 0$

$(x-6)(x-6)$

$4x^2 + 4x - 1$

$(2x-1)(2x+1)$

$(x-6)(2x-1)(2x+1)$

$x = 6 \quad x = \frac{1}{2} \quad x = \frac{1}{2}$

26.) $\sqrt{3x+2} = 0$

$3x = -2$

$x = -\frac{2}{3}$

28.) $2x^2 - 13x - 7$

$x = 7$

$x = -\frac{1}{2}$

$\frac{13 \pm \sqrt{225}}{4}$

30.) $\sqrt{3x - 14} - 8 = 0$

$\sqrt{3x - 14} = 8$

$3x - 14 = 64$

$3x = 78$

$x = 26$

40.) $x + 3$

$x \leq 0$

increasing $(-\infty, 0)$

Constant $(2, \infty)$

$(0, 2)$

42.) $g(x) = x$ constant

44.) $f(x) = 3x^2 - 6x + 2$ $(-\infty, -1)$ $(0, 1)$ dec

$(-1, 0)$ $(1, \infty)$ inc

46.) $f(x) = +\sqrt{x + 3}$ $(-5, -2]$ decreasing

$[-2, \infty)$ increasing

48.) $f(x) = x^{\frac{2}{3}}$

dec $(-\infty, 0)$

inc $(0, \infty)$

50.) $(-1, 0)$ $(2, 0)$

52.) $(0, 1)$ $(3.274, 0)$

54.) $(4, 0)$ $(0, 0)$

66.) $\frac{540 - 0}{9 - 0} = 60$

68.) $s = -16t^2 + v_0 t + s_0$

$s = -16t^2 + 32t + 48$

$5 - 256 + 288 + 65 = 38.5$

72.) $(-x)^3 - 5(-x) = x^3 + 5x$

$-x^3 + 5x = x^3 - 5x$

74.) Odd

$+\sqrt{7-(-x)^2} = +\sqrt{7-x^2}$

$-x\sqrt{7-x^2}$

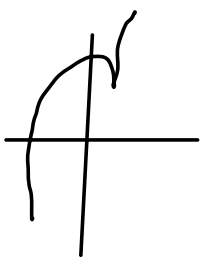
neither

76.) $s = 16t^2 + vt + 80$

$-16t + v + 80 = 64 + v$

$-64 + 2v + 80 = 16 + v$

90.) a.)



b.) if $x = 0$ then $y = 34$

inc $(0, 6.602)$ $(19.809, 24)$

dec $(6.602, 19.809)$

d min $(34, 0)$ max $(64, 6)$

e co $0 \le x \le 24$

92.) false

94.) Domain $[-4, 5)$

range $[0, 9]$

b.) $x = 3$

c $-4 \le x < 0$ inc

$3 < x < 5$ inc $\quad 0 < x < 3$ dec

16.) $3x + 78 = 0$ $\boxed{x = 6}$

18) $3x^2 + 22x = 16$

$\boxed{x = \frac{2}{3}}$

$\boxed{x = -8}$

$\frac{-22 \pm 26}{6}$ $\frac{-22 + \sqrt{292}}{6}$

20.) $0 = \frac{x^2 - 9x + 14}{4x}$ $\frac{9 \pm \sqrt{81 - 4 \cdot 1 \cdot 14}}{2}$

$\boxed{x = 7}$
$\boxed{x = 2}$

22.) $25x^4 + 9x^2 \neq 0$

$25x^2 = 9$

$\boxed{x = \frac{3}{5}}$
$\boxed{x = \frac{-3}{5}}$

32.) $x = \frac{3}{\sqrt{2}}$

$x = \frac{-3}{\sqrt{2}}$

34.) $f(x) = x^2 - 4x$ Decreasing $(-\infty, 2)$
increasing $(2, \infty]$

36.) $f(x) = x^3 - 3x^2 + 2$ Decreasing $(0, 2)$
increasing $(-\infty, 0)$
$(2, \infty)$

38.) $f = \frac{x^2 + x + 1}{x + 1}$ decreasing $(-1, -2)$
$(-1, 0)$
increasing $(-\infty, -2)$
$(0, \infty)$

56.) $fx \geq 0 \quad 0 \leq 4x+2$

$\frac{-2}{4} \leq x$

58.) $0 \leq x^2 - 4x$

$x \geq 4$

60.) $0 \leq |x+5|$

$-5 \leq x$

62.) $fx = x^2 - 2x + 8$

$\frac{22-7}{5-1} = \frac{16}{4} = 4$

64.) $-x^3 + 6x^2 + x \quad \frac{c-6}{c-1} = \frac{0}{5} = 0$

76.) $4\frac{5}{3}$ Even

78.) $5 - 3x = 5 = 3(-x)$

Odd

80.) $x^2 - 4$

Even

82.) $\sqrt[3]{x-4}$ odd

84.) $4x - x^2 - (2x) = h$

$-x^2 + 2x = h$

86.) $x = \frac{2}{y} \quad y > 0 \quad xy = 2$

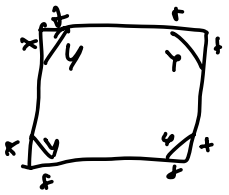
$y = \frac{2}{x}$

$L = \frac{2}{x}$

88 a $S = 8 \cdot 8 = 64$

$x^2 + x^2 = 4$

$4 = 2x^2$



remaing of Square $= 64 - 2x^2$

b.) $A(x) = 64 - 2x^2$

c.) $64 - 2x^2$ $(32, 64]$

$8 = 2x$

94

d. min: 0

max: 9

e. neither

98.) $f(x) = x^2 - x^4$

$f(x) = x^2 - x^4$ Even

$g(x) = 2x^3 + 1$ neither

$h(x) = x^5 - 2x^3 + x$ odd

$j(x) = 2 \cdot 4^x$ neither

$f(x)$ $x^8 - 2x^4 + x^2$ neither

$P(x) = x^9 + 3x^5 - x^3 + x$ odd