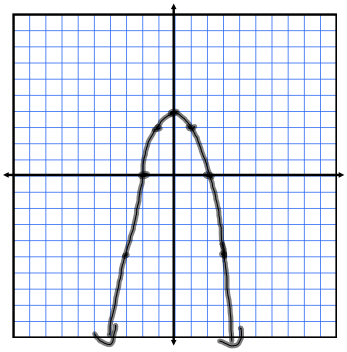
Calculus AB

P-1

Graphs and Models

Sketch the graph of the equation by point plotting. (or not) (pg 8)

7) $4 - x^2$



In exercises 19-28, find any intercepts.

How do you find x - intercepts? Put zero in for y
Calc → Zeros

How do you find y - intercepts? Put zero for x
Trace → Zero

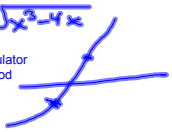
22) ~~$y^2 = x^3 - 4x$~~ → $y_1 = \sqrt{x^3-4x}$, $y_2 = -\sqrt{x^3-4x}$

x-ints $0 = x^3 - 4x$

$\{0, \pm 2\}$ $0 = x(x^2-4)$

$= x(x+2)(x-2)$

Calculator Method



y-int $y^2 = 0 - 4(0)$

(0,0)

In exercises 29-40, test for symmetry with respect to each axis and to the origin.

Odd function - Origin Symmetry

Even function - y-axis Symmetry

34) $xy^2 = -10$

$y^2 = \frac{-10}{x}$

$y = \pm\sqrt{\frac{-10}{x}}$

x-axis

In exercises 41-58, ~~sketch the graph of the equation~~. Identify any intercepts and test for symmetry.

52) $y = \sqrt{25 - x^2}$

x-int : $\{\pm 5\}$

y-int : $(0, 5)$

y-axis

In exercises 63-70, find the points of intersection of the graphs of the equations.

66) $x = 3 - y^2$
$y = x - 1$

$x = 3 - (x-1)^2$

$x = 3 - (x^2 - 2x + 1)$

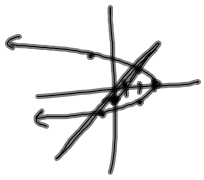
$x = 3 - x^2 + 2x - 1$

$x^2 - x - 2 = 0$

$(x+1)(x-2) = 0$

(2, 1)

(-1, -2)



7th ed 77) The table shows the consumer price index (CPI) for selected

Year	1970	1975	1980	1985	1990	1995	2000
CPI	38.8	53.8	82.4	107.6	130.7	152.4	168.7

a) Use the regression capabilities of a graphing calculator to find a mathematical model of the form $y = at^2 + bt + c$ for the data. In the model, y represents the consumer price index, and t represents the year, with $t = 0$ corresponding to 1970

b) Graph the model and compare the data with the model.

c) Use the model to predict the CPI for the year 2004.

Assignment:

Pg. 8

1-14 all

17-57odd,

63 - 73 odd,

~~75, 76~~, 78

do up to 40

For problems 5 - 14, make quick, rough sketches using graph identification with the given transformation.