Honors Precaclulus

Worksheet #2

Name Key

Solve GRAPHICALLY using your calculator. Round to three decimal places. LABEL & SCALE ALL GRAPHS.

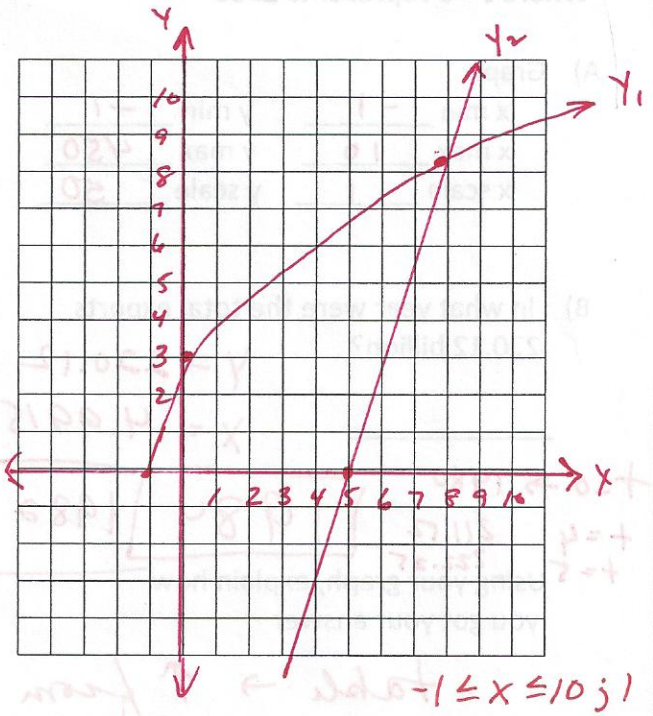
1.

$\sqrt{8x+9} = 3x - 15$

$y_1 = \sqrt{8x+9}$

$y_2 = 3x - 15$

A) Graph



$-1 \le x \le 10; 1$

$-20 \le y \le 10; 2$

B) Solution: $x = 7.8197$

(Intersection Point (7.8197, 8.4591))

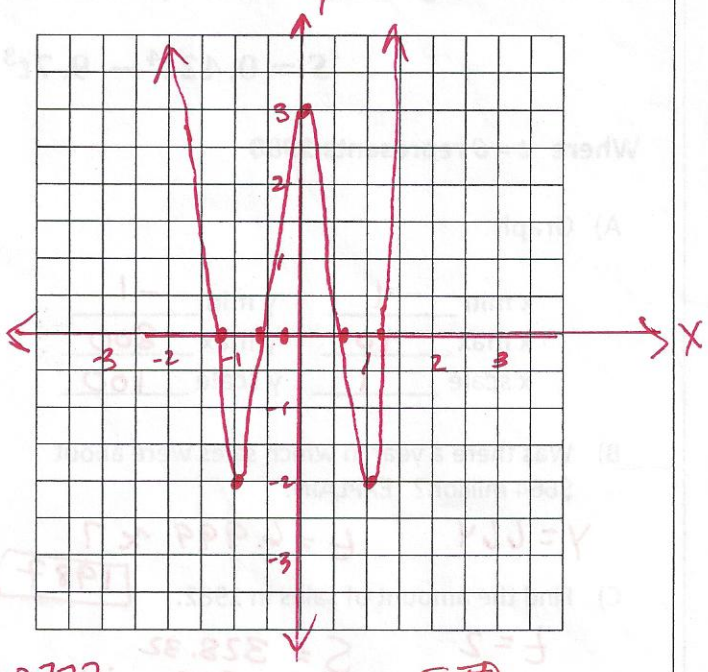
C) Using your graph, explain how you found the solution.

Intersection.

2.

$y = 5x^4 - 10x^2 + 3$

A) Graph



B) Window

x min	-2	y min	-3
x max	2	y max	5
x scale	1	y scale	1

C) X – intercept(s) see below

D) Y – intercept (0, 3)

E) Minimum Points: (-1, -2) (1, -2)

F) Solve where $y = 0$

$X_1 =$ -1.2777 $X_2 =$ ~~.6063~~ -.6062 $X_3 =$ .6063 $X_4 =$ 1.2777

~~STD~~

$-3 \le x \le 3; 1$

3. United States Exports: For 1980 through 1990, the total exports, E (in billions of dollars), can be modeled by :

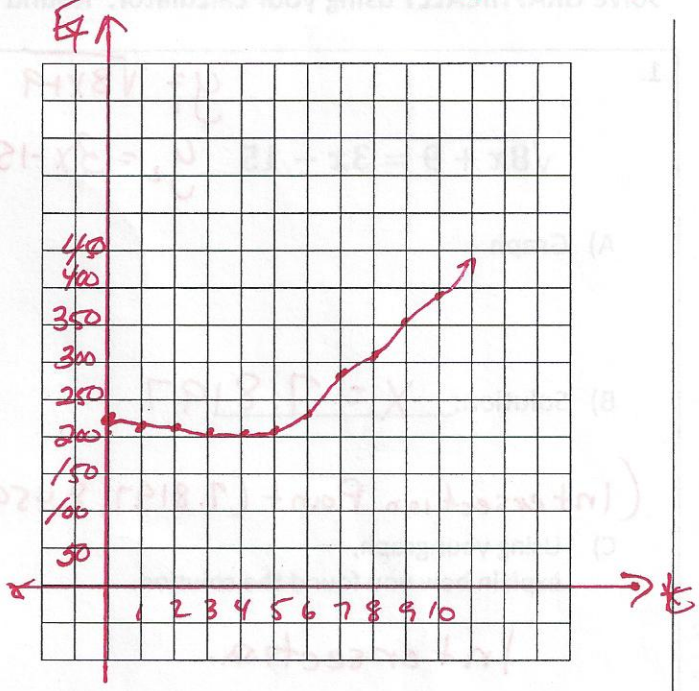
$0 \le x \le 10$; 1
$0 \le y \le 450$; 25

$$E = -0.13t^4 + 2.7t^3 - 14t^2 + 18t + 224$$

Where *t = 0* represents 1980

A) Graph

x min -1 y min -1
x max 10 y max 450
x scale 1 y scale 50



B) In what year were the total exports 220.12 billion?

Y = 220.12
X = 4.9915 yr

t=0 → 1980
t=4 211.52
t=5 222.25

1984 | 1982

Using your graph, explain how you got your answer

table → ↑ from t=4 to t=5

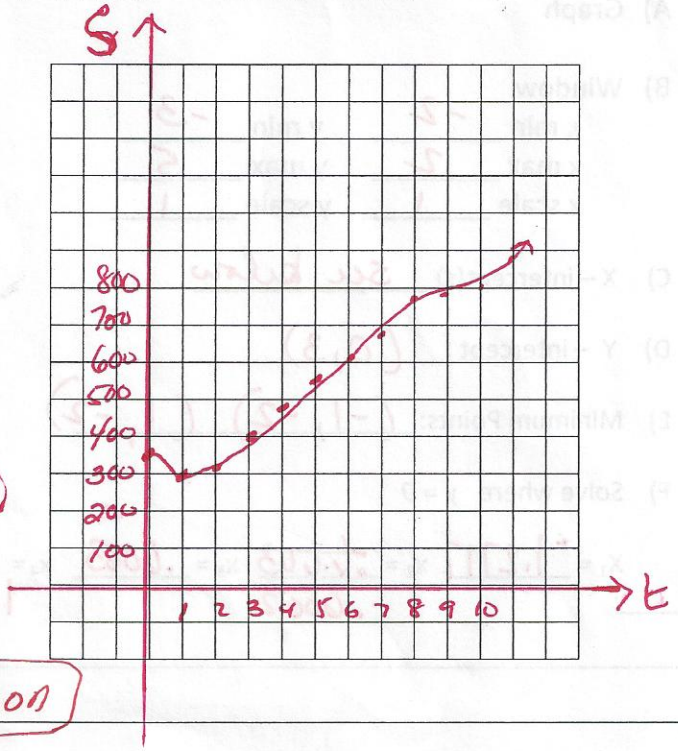
4. For 1980 through 1990, the sales S (in millions of dollars), of snow equipment can be modeled by:

$$S = 0.42t^4 - 9.7t^3 + 72.3t^2 - 134t + 378$$

Where *t = 0* represents 1980

A) Graph

x min -1 y min -1
x max 10 y max 800
x scale 1 y scale 100



B) Was there a year in which sales were about $664 million? EXPLAIN.

Y = 664 t = 6.999 ≈ 7

1987

C) Find the amount of sales in 1982.

t = 2 S = 328.32
~328 million

Explain how you got your answer.

$328 million