

Auburn Hills IIC
TI-83/84 CALCULATOR SEMINAR #2
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1 GRAPHING A LINEAR EQUATIONS

Press: **Y=**
 \Y1= **X + 2** **ZOOM** **4** ZDecimal

Press: **WINDOW**

WINDOW
 Xmin = -4.7
 Xmax = 4.7
 Xscl = 1
 Ymin = -3.1
 Ymax = 3.1
 Yscl = 1

Press: **GRAPH**

Press: **TRACE** **0** **ENTER**

Answer: X=0, Y=2 This is the y-intercept.

Press: **←** Until you reach the X-axis.

Answer: X=-2, Y=0 This is the x-intercept.

A Finding the X-Intercept

Press: **Y=** **CLEAR**
 \Y1= **- 2X + 6** **ZOOM** **6** ZStandard

Press: **WINDOW**

WINDOW
 Xmin = -10
 Xmax = 10
 Xscl = 1
 Ymin = -10
 Ymax = 10
 Yscl = 1

Press: **GRAPH**

Press: **2nd** **CALC** **TRACE** **2** zero

Left Bound? Press **→** until cursor is just left of (and above) the x-intercept.

Press: **ENTER**

Right Bound? Press **→** until cursor is just right of (and below) the x-intercept.

Press: **ENTER**

Guess? **ENTER**

ROOT **X=3** **Y=0**

B Finding the Y-Intercept

Press: **TRACE** **0** **ENTER**

Answer: X=0 Y=6

2 GRAPHING HIGHER ORDER EQUATIONS

Press: **Y=** **CLEAR**
 \Y1= **X^3 - 5X** **ZOOM** **6** ZStandard

A Finding the Minimum

Press: **2nd** **CALC** **TRACE** **3** minimum

Left Bound? Press **→** until cursor is just to left of (and above) the minimum.

Press: **ENTER**

Right Bound? Press **▶** until cursor is just right of (and above) the minimum.

Press: **ENTER**

Guess? **ENTER**

Minimum **X=1.29** **Y=-4.30**

B Finding the Maximum

Press: **2nd** **CALC** **TRACE** **4** maximum

Left Bound? Press **◀** until cursor is just left of (and below) the maximum.

Press: **ENTER**

Right Bound? Press **▶** until cursor is just right of (and below) the maximum.

Press: **ENTER**

Guess? **ENTER**

Minimum **X=-1.29** **Y=4.30**

3 GRAPHING STORY PROBLEMS

A Determine your daily gross pay, assuming you earn \$11.25/hr., and you worked 7 hours.

Press: **Y=** **CLEAR**

$Y_1 = 11.25X$

Press: **WINDOW**

WINDOW

Xmin	=	0	Can't work less than zero hours.
Xmax	=	10	Hours you could work in a day, (must be greater than 7).
Xscl	=	1	Leave at 1.
Ymin	=	0	Can't earn less than zero dollars.
Ymax	=	100	Estimate ($\$10 \times 7 = \70)
Yscl	=	1	Leave at 1.

Press: **TRACE**

Press: **▶** Until X = 7.02, Y = 78.99

Press: **TRACE** **7**

Answer: **X = 7** **Y = 78.75**

B Determine how high a ball hit at 100 feet/second will go.

Press: **Y=** **CLEAR**

$Y1=$ 100X-16X²

Press: **WINDOW**

WINDOW

Xmin	=	0	Always zero.
Xmax	=	10	First guess.
Xscl	=	1	Leave at 1.
Ymin	=	-10	Let the calculator determine.
Ymax	=	10	Let the calculator determine.
Yscl	=	1	Leave at 1.
Xres	=	1	Leave at 1.

Press: **ZOOM** **0** (ZoomFit)

Press: **2nd** **CALC** **TRACE** **4** maximum

Left Bound? Press **←** until cursor is just left of (and below) the maximum.

Press: **ENTER**

Right Bound? Press **→** until cursor is just right of (and below) the maximum.

Press: **ENTER**

Guess? **ENTER**

Minimum **X=3.125** **Y=156.25** In 3.125 seconds the ball will reach 156.25 feet.

C Determine how long it will take for the ball to fall back to earth.

Press: **2nd** **CALC** **TRACE** **2** zero

Left Bound? Press **→** until cursor is just left of (and above) the x-intercept.

Press: **ENTER**

Right Bound? Press **→** until cursor is just right of (and below) the x-intercept.

Press: **ENTER**

Guess? **ENTER**

ROOT **X=6.25** **Y=0** In 6.25 seconds the ball will have fallen back to earth.

4 ZOOMING

Press: **Y=** **CLEAR**

\Y1= $X^4 - X^3 - 5X^2 + 0.4$ **ZOOM** **6** (ZStandard)

A Zoom In

Press: **ZOOM** **2** (Zoom In) **ENTER** Zooms in at X=0, Y=0.

Press: **ZOOM** **6** (ZStandard) Zooms back to original window.

B Zoom Out

Press: **ZOOM** **3** (Zoom Out) **ENTER** Zooms out at X=0, Y=0.

C Zoom Box

Press: **ZOOM** **1** (ZBox) **ENTER**

Press: **▲** *Three times.* Moves cursor to Y=3.87.

Press: **◀** *Five times.* Moves cursor to X=-4.26

Press: **ENTER** Anchors upper left hand corner of box.

Press: **▼** *Fourteen times.* Moves cursor to Y=-14.19.

Press: **▶** *Eleven times.* Moves cursor to X=5.11

Press: **ENTER** Shows new window.

5 STYLE

Press: **Y=** **CLEAR**

\Y1= $5 / (X - 3)$ **ZOOM** **6** (ZStandard)

A Draw Dot

Press: **Y=** **◀** (Twice)

Press: **ENTER** 6 times, (until three dots appear diagonally next to Y1=)

Press: **GRAPH** Shows "dotted" graph without asymptote.

B Draw Line

Press: **Y=** **◀** (Twice)

Press: **ENTER** Just once (until a solid line appears diagonally next to Y1=)

Press: **GRAPH** Returns to graph.