



Keystroke Guide for Chapter 3

Essential keystroke sequences (using the model TI-82 or TI-83 graphics calculator) are presented below for all Activities and Examples found in this chapter that require or recommend the use of a graphics calculator.

Internet connect

For Keystrokes of other graphing calculator models, visit the HRW web site at go.hrw.com and enter the keyword **MB1 CALC**.



LESSON 3.1

Activity

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Move the cursor as indicated.

For Step 1, graph $y = 2x - 1$ and $y = -x + 5$ on the same screen, and find any points of intersection.

Use friendly viewing window $[-9.4, 9.4]$ by $[-6.2, 6.2]$.

Graph the equations:

$Y=$ 2 X,T,θ,n - 1 $ENTER$ ($Y2=$) (-) X,T,θ,n + 5 $GRAPH$

Find any points of intersection:

2^{nd} $TRACE$ $5:intersect$ $ENTER$ (First curve?) $ENTER$ (Second curve?)
 $ENTER$ (Guess?) $ENTER$

Use a similar keystroke sequence for Step 2.

EXAMPLE 1

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For part a, graph $y = -x + 5$ and $y = \frac{x+7}{5}$ on the same screen, and find any points of intersection.

Use standard viewing window $[-10, 10]$ by $[-10, 10]$.

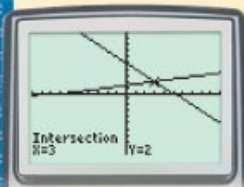
Graph the equations:

$Y=$ (-) X,T,θ,n + 5 $ENTER$ ($Y2=$) () X,T,θ,n + 7 ()
+ 5 $GRAPH$

Find any points of intersection:

Use a keystroke sequence similar to that in the previous Activity.

Use a similar keystroke sequence for part b.



EXAMPLE 3

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Graph $y = 500 - x$ and $y = \frac{0.06(500) - 0.10x}{0.04}$ on the same screen, and find any points of intersection.

Use viewing window $[0, 400]$ by $[0, 500]$.

Graph the equations:

$Y=$ 500 $-$ X,T,θ,n $ENTER$ ($Y2=$ ($.06$ (500) $-$ $.10$ X,T,θ,n) $+$ $.04$)

Find any points of intersection:

Use a keystroke sequence similar to that in the previous Activity.

LESSON 3.2

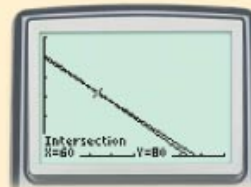
EXAMPLE 2 Graph $y = \frac{930 - 5.5x}{7.5}$ and $y = \frac{1920 - 12x}{15}$ on the same screen, and find any points of intersection. Then verify with a table.

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Use viewing window $[0, 200]$ by $[0, 150]$.

Graph the equations, and find any points of intersection:

Use a keystroke sequence similar to that in the Activity and Examples 1 and 3 in Lesson 3.1.



Verify the solution with a table:

2^{nd} $WINDOW$ (TblStart =) 40 $ENTER$
 \uparrow T1-B2: (Tbl Min \rightarrow)
 $(\Delta Tbl =)$ 10 $ENTER$ (Indpnt:) Auto \downarrow
 (Depend:) Auto 2^{nd} $GRAPH$

X	Y ₁	Y ₂
40	84.667	86
50	82.333	88
60	80	80
70	77.667	72
80	75.333	64
90	73	56
100	70.667	48

X=60

Enter the equations before using the table.

Activity

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For Step 1, graph $y = x + 2$ and $y = \frac{10 + 5x}{5}$ on the same screen.

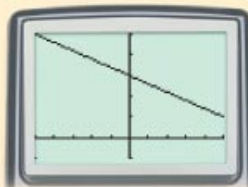
Use standard viewing window $[-10, 10]$ by $[-10, 10]$.

Use a keystroke sequence similar to that in the Activity in Lesson 3.1.

For Step 2, use a keystroke sequence similar to that in the Activity in Lesson 3.1. Use standard viewing window $[-10, 10]$ by $[-10, 10]$.

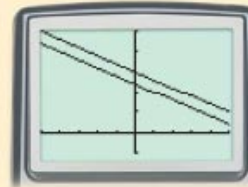
EXAMPLES 3 and 4 For Example 3, graph $y = \frac{12 - 2x}{5}$ and $y = \frac{15 - 2x}{5}$ on the same screen.

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Use viewing window $[-5, 5]$ by $[-1, 5]$.

$Y=$ (12 $-$ 2 X,T,θ,n) $+$ 5
 $ENTER$ ($Y2=$ (15 $-$ 2 X,T,θ,n)
 $+$ 5 $GRAPH$



For Example 4, use a similar keystroke sequence. Use viewing window $[-5, 5]$ by $[-1, 5]$.

TECHNOLOGY

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Be sure that the calculator is in parametric mode.

Graph the parametric equations $x(t) = t$ and $y(t) = t^2$ and the inverse on the same screen with $y = x$.

Use square viewing window $[-5, 5, 0.3]$ by $[-4.7, 4.7]$ by $[-3.1, 3.1]$.

Graph the function:

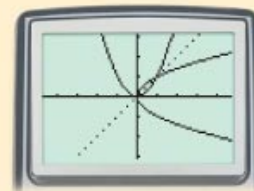
$Y=$ (X1T=) X,T,θ,n ENTER (Y1T=) X,T,θ,n x^2 ENTER

Graph the inverse:

(X2T=) X,T,θ,n x^2 ENTER (Y2T=) X,T,θ,n ENTER

Graph the line $y = x$:

(X3T=) ◀ ◀ ENTER ENTER ENTER
 ENTER (·, X3T=) ▶ ▶ X,T,θ,n
 ENTER (Y3T=) X,T,θ,n GRAPH
 TI-82: (X3T=) X,T,θ,n ENTER (Y3T=) X,T,θ,n ENTER



The TI-82 cannot graph a dashed line.

EXAMPLE 3

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Be sure that the calculator is in parametric mode.

Move the cursor to the desired point.

Move the cursor to the desired point.

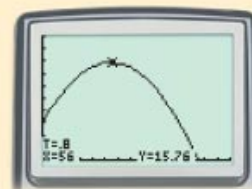
Graph the parametric equations $x(t) = 70t$ and $y(t) = 6 + 25t - 16t^2$.

Use viewing window $[0, 10, 0.1]$ by $[0, 150]$ by $[0, 20]$.

$Y=$ (X1T=) 70 X,T,θ,n ENTER (Y1T=) 6 + 25 X,T,θ,n - 16 X,T,θ,n x^2 GRAPH

a. Find the maximum y -value on the graph.

Use the TRACE feature.



b. Find the y -value when x is near 120.

Use the TRACE feature.

