### A3 & A4 – Intro to the TI-84

**Beginning TI-84+ Helpful Spots**

<table>
<thead>
<tr>
<th>Window</th>
<th>Zoom</th>
<th>Graph</th>
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<tbody>
<tr>
<td>y =</td>
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```
Plot1 Plot2 Plot3
\[ Y_1 = 0 \]
\[ Y_2 = 0 \]
\[ Y_3 = 0 \]
\[ Y_4 = 0 \]
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<table>
<thead>
<tr>
<th>Stat Plot</th>
<th>Tblset</th>
<th>Format</th>
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<th>Stat Calc</th>
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<th>Number</th>
<th>Probability</th>
<th>Apps</th>
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<th>Test</th>
<th>Draw</th>
<th>Matrix</th>
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<th>Catalog</th>
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Graphing Linear equations

1) Show the graph of:  \( y = 2x - 5 \) and  \( y = -2x - 5 \)
   * table of values *
   What do both lines have in common? ______________

2) Show the graph of:  \( x + y = 180 \).
   * you must set everything = to y; change your window *
   What kind of shape have you created? ______________

3) Show the graph of:  \( y = x \);  \( y = 2x \);  \( y = 3x \);  \( y = 4x \); up to \( y = 10x \).
   * try Zoom Fit *
   What do all the lines have in common? ______________

Graphing two Linear equations and finding intersection

1) You open up a new business and need to purchase a copier machine.
   Two options are available:
   * Acme copiers charge $250 plus $.01/copy.
   * Best printers charge $70 plus $.03/copy.
   \((x = \# \text{ of copies}; \ y = \text{cost to rent})\)
   * write both equations in terms of \( y = \); change window; intersection*
   a) Show the graph of each equation.
   b) When do both copiers cost the same? __________
   c) Which option is the best buy? _____________

2) The Tortoise and the Hare decided to have a race. The Hare was generous by giving the Tortoise a 100 ft. head-start. The Hare runs 5 ft./sec. and the Tortoise speed is 0.1ft./sec.
   * write both equations in terms of \( y = \); change window; intersection*
   a) Show the graph of each equation.
   b) Use the graph to tell when the Hare reaches the tortoise? ________
Graphing lines that are not perfectly straight

1) Show the graph of: \( y = x^2 \) and \( y = -x^2 \)
   a) What do you notice about the graphs? __________
   b) Where do the lines intersect? _____________

2) Show the graph of: \( y = -x + 6 \) and \( y = x^2 \).
   a) What are the points of intersection? _____________
   b) What happens when you set these equal to each other? _____

Exploration problems

1) Graph: \( y = 10 - x \); \( y = 10 + x \); \( y = -10 - x \); and \( y = -10 + x \).
   a) What did you just create? _____________

2) Tom saved $1200 and is saving $50/month.
   Eileen saved $1500 and is saving $25/month.
   a) Show the graph of each equation.
   * adjust your window *
   b) When do Tom and Eileen have the same amount of money? ___
   c) After how many months will Tom have saved more money? ___

3) Solve the following system of equations graphically.
   a) \( y = 2x - 1 \)
      \( y = -3x + 4 \)

   b) \( y = x^2 + 3x + 1 \)
      \( y = 3x + 2 \)

4) Graph the system of inequalities.
   a) \( y < 3x - 5 \)
      \( y \geq 2x^2 - 8 \)

5) Graph the polar equation:
   \( r = 8 \cos 4\theta \)
TI84+ Activities

I) 1.

II) 1.

III) 1.

IV) 1.

2a.

b.

3. a.

b.

4a.
TI-84 Plus Demo
jimjeckovich@adelphi.net, jjeckovich@nfschools.net

Basic Operations and MATH key.

1  
\[5+3\times2-(5-7)^3\]  
\[\sqrt[3]{-27}\]  
\[.75\times\text{Frac}\]  

2  
\[\sin(\pi/2)\]  
\[\sin(\pi/2)\]  
\[\cos^{-1}(-1)\]  

3  
\[5\times\sqrt{32}\]  
\[4\times\sqrt{81}\]  
\[\text{abs}(-9)\]  

4  
\[\text{round}(1.2345,3)\]  
\[\text{lcm}(12,18)\]  
\[\text{gcd}(34,51)\]  

5  
\[\text{conj}(3+4i)\]  
\[\text{angle}(3+4i)\]  
\[\text{abs}(3+4i)\]  

6  
\[\text{rand}\]  
\[\text{randInt}(1,6)\]  

7  
\[5\text{ nPr} 2\]  
\[5\text{ nCr} 2\]  
\[7!\]  

8  
\[5=2\]  
\[5>2\]  
\[5<2\]
Graphing

Probability Simulation
Version 1.0
© 2000 Corey Taylor
Rusty Washer
PRESS ANY KEY

9

10

P1: y1=(x-1)(x-4)<x
P2: y2=x^3-5
P3: y3=
y4=
y5=
y6=

11

12

CALCULATE
1: value
2: zero
3: minimum
4: maximum
5: intersect
6: dy/dx
7: f(x)dx

13

14

P1: y1=2sin(.5x)
P2: y2=-4cos(2x)
P3: y3=
y4=
y5=
y6=
y7=

15
Normal Distribution

1-Var Stats
\[ x = 87.30769231 \]
\[ \overline{x} = 2270 \]
\[ s = 198900 \]
\[ \overline{s} = 5.334935657 \]
\[ \sigma_x = 5.231334811 \]
\[ n = 26 \]

Curve Fitting (Regression)

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>Z</th>
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<tbody>
<tr>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.2</td>
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\[ L2(7) = \]
Parametric Equations

Polar Equations

Sequences and Series
Multivariable Linear Systems

Solve: \[ x + y + z = 6 \]
\[ 2x - y + z = 3 \]
\[ 3x - z = 0 \]

\[ \begin{bmatrix} 1 & 1 & 1 \\ -1 & 1 & 1 \\ 0 & -1 & 1 \end{bmatrix} \]
\[ \begin{bmatrix} 3 \\ 4 \end{bmatrix} = 0 \]