

# TI-Nspire Standardized Test Prep compatible with the ACT

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**IMPORTANT:** Make sure to update your TI-Nspire Operating System (OS).  
Update to at least level 3.2 for the steps in this document to work properly

## Elementary Algebra - Substitution

Evaluation of algebraic expressions through substitution

When  $x = 3$  and  $y = 5$ , by how much does the value of  $3x^2 - 2y$  exceed the value of  $2x^2 - 3y$ ?

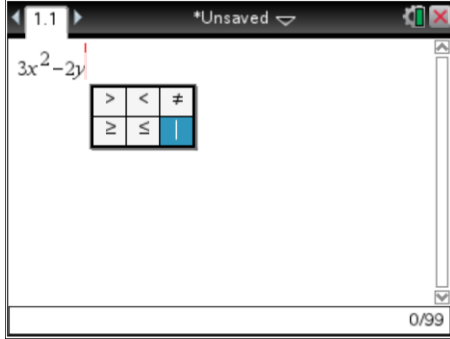
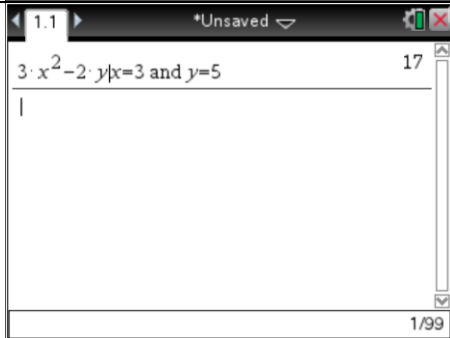
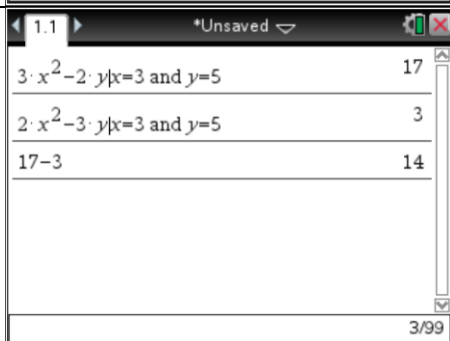
F. 4

G. 14

H. 16

J. 20

K. 50

<p>Type the first expression, <math>3x^2 - 2y</math>.</p> <p>Press <b>ctrl</b> <b>=</b> and choose the <i>such that</i> command (it looks like a vertical bar).</p>	 <p>The screenshot shows a calculator window titled "1.1" with a toolbar. The expression <math>3x^2 - 2y</math> is entered. A menu is open, showing options: <math>&gt;</math>, <math>&lt;</math>, <math>\neq</math>, <math>\geq</math>, <math>\leq</math>, and a vertical bar <math> </math>. The vertical bar is highlighted. The status bar at the bottom right shows "0/99".</p>
<p>Type <b>x=3</b> and <b>y=5</b> then press <b>enter</b>.</p> <p>Press the <math>\blacktriangle</math> arrow on the touchpad twice to highlight the expression you typed in.</p>	 <p>The screenshot shows the same calculator window. The expression is now <math>3 \cdot x^2 - 2 \cdot y   x=3 \text{ and } y=5</math> and the result "17" is displayed on the right. The status bar at the bottom right shows "1/99".</p>
<p>Press <b>enter</b> and edit the expression to read, <math>2x^2 - 3y</math>, then press <b>enter</b>.</p> <p>Subtract the value of the second expression from the value of the first expression.</p>	 <p>The screenshot shows the calculator window with two lines of input. The first line is <math>3 \cdot x^2 - 2 \cdot y   x=3 \text{ and } y=5</math> with the value "17". The second line is <math>2 \cdot x^2 - 3 \cdot y   x=3 \text{ and } y=5</math> with the value "3". Below these, the calculation <math>17 - 3</math> is shown with the result "14". The status bar at the bottom right shows "3/99".</p>

[http://www.actstudent.org/sampletest/math/math\\_01.html](http://www.actstudent.org/sampletest/math/math_01.html)

## Pre-Algebra - Solving Linear Equations

Solving Linear Equations in one-variable

If  $9(x - 9) = -11$ , then  $x = ?$

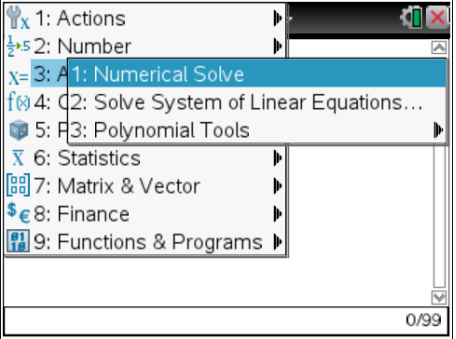
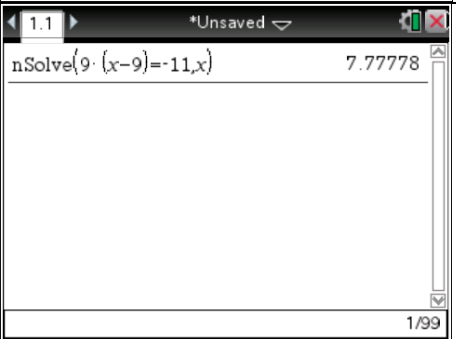
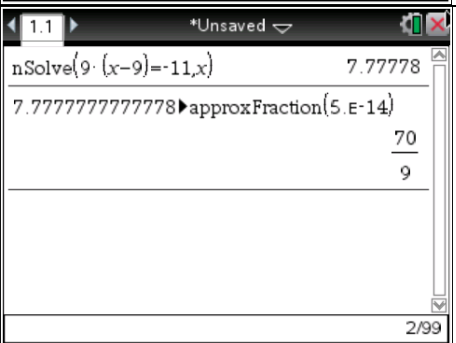
A.  $\frac{-92}{9}$

B.  $\frac{-20}{9}$

C.  $\frac{-11}{9}$

D.  $\frac{-2}{9}$

E.  $\frac{70}{9}$

<p>Press <b>menu</b> &gt; Algebra &gt; Numerical Solve.</p>	
<p>Then type the equation, <math>9(x - 9) = -11</math> Now, type <b>,</b> <b>X</b> and press <b>enter</b>.</p>	
<p>Press <b>menu</b> &gt; Number &gt; Approximate to Fraction, then press <b>enter</b>.</p>	

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## Intermediate Algebra - Functions

### Evaluating a Function at a Value

A function  $f(x)$  is defined as  $f(x) = -8x^2$ . What is  $f(-3)$  ?


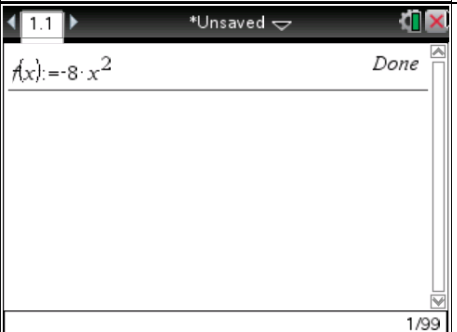
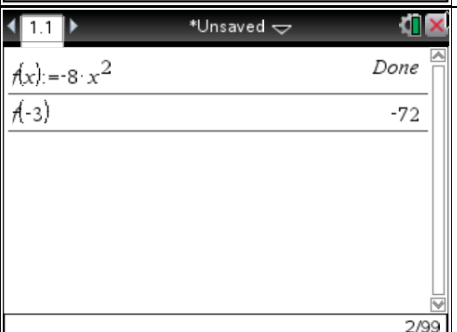
F.  $-72$

G.  $72$

H.  $192$

J.  $-576$

K.  $576$

Type $f(x)$ , then press <b>ctrl</b> <b> </b> <b> </b> <b> </b> (this types :=)	 <p>A screenshot of a calculator interface. The top bar shows "1.1" and "*Unsaved". The main display area contains the text "f(x):=". The bottom right corner shows "0/99".</p>
Then type the function, $-8x^2$ and press <b>enter</b> .	 <p>A screenshot of a calculator interface. The top bar shows "1.1" and "*Unsaved". The main display area contains the text "f(x):=-8 * x^2". The word "Done" is visible in the top right corner. The bottom right corner shows "1/99".</p>
Type $f(-3)$ and press <b>enter</b> .	 <p>A screenshot of a calculator interface. The top bar shows "1.1" and "*Unsaved". The main display area contains the text "f(x):=-8 * x^2" and "f(-3)". The word "Done" is visible in the top right corner. The bottom right corner shows "2/99".</p>

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## Pre-Algebra - Lowest Common Multiple

Basic Operations Using Whole Numbers

What is the least common multiple of 70, 60, and 50 ?

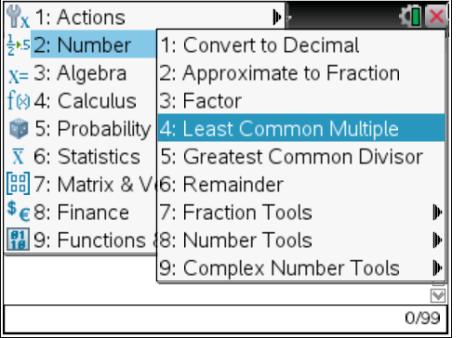

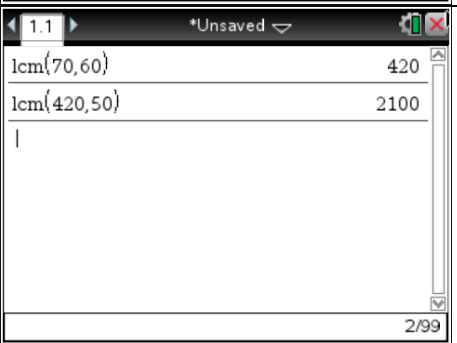
F. 60

G. 180

H. 210

J. 2,100

K. 210,000

<p>Press <b>menu</b>&gt;Number&gt;Least Common Multiple.</p>	 <p>A screenshot of a calculator's menu system. The 'Number' menu is open, and 'Least Common Multiple' is highlighted. Other options include 'Convert to Decimal', 'Approximate to Fraction', 'Factor', 'Greatest Common Divisor', 'Remainder', 'Fraction Tools', 'Number Tools', and 'Complex Number Tools'.</p>
<p>Then type 70,60 and press <b>enter</b>.</p> <p>Now, we are going to find the LCM of the <u>answer you just calculated</u> and the 3rd number.</p>	 <p>A screenshot of a calculator window showing the calculation of the least common multiple of 70 and 60. The input is 'lcm(70,60)' and the result is '420'.</p>
<p>Press <b>menu</b>&gt;Number&gt;Least Common Multiple. Type 420,50 and press <b>enter</b>.</p>	 <p>A screenshot of a calculator window showing the calculation of the least common multiple of 420 and 50. The input is 'lcm(420,50)' and the result is '2100'.</p>

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## Intermediate Algebra - **Modeling**

Find the function given a set of data

As Part of a lesson on motion, students observed a cart rolling at a constant rate along a straight line. As shown in the chart below, they recorded the distance,  $y$  feet, of the cart from a reference point at 1 –second intervals from  $t = 0$  seconds to  $t = 5$  seconds.

$t$	0	1	2	3	4	5
$y$	14	19	24	29	34	39

Which of the following equations represent this data?

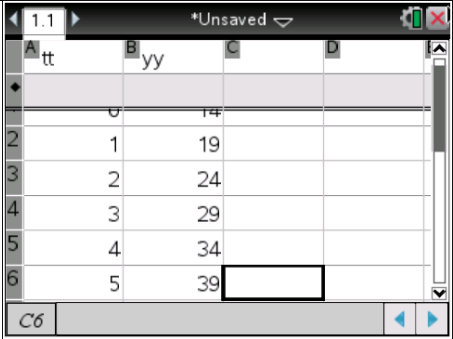
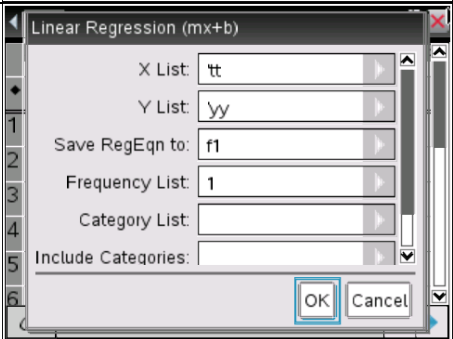
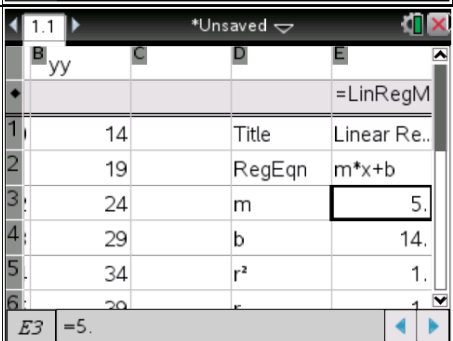
F.  $y = t + 14$

G.  $y = 5t + 9$

H.  $y = 5t + 14$

J.  $y = 14t + 5$

K.  $y = 19t$

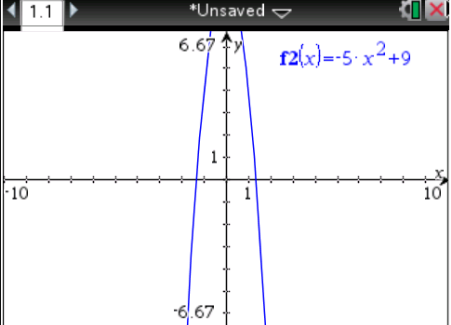
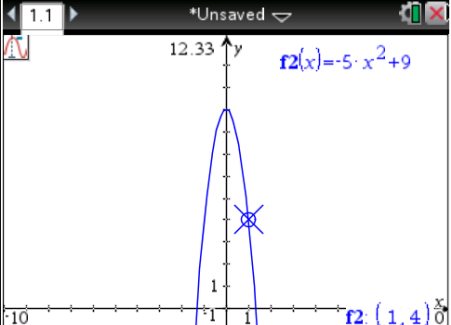
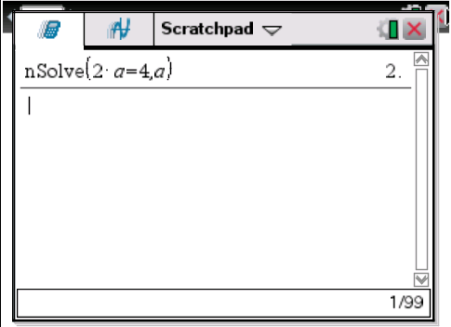
<p>Insert a <b>Lists &amp; Spreadsheet</b> page.</p> <p>Title the lists (in the top cell) <math>tt</math> and <math>yy</math>.</p> <p>Type in the data. (Press <b>tab</b> to navigate to the next cell).</p>	
<p>Place your cursor in column C.</p> <p>Press <b>menu</b> &gt; Statistics &gt; Stat Calculations &gt; Linear Regression (mx+b).</p>	
<p>Press <b>enter</b> to see the results of the regression.</p>	

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**Coordinate Geometry - Points**  
Relations between equations and graphs

The graph of  $y = -5x^2 + 9$  passes through  $(1, 2a)$  in the standard  $(x, y)$  coordinate plane. What is the value of  $a$ ?

- F. 2      G. 4      H. 7      J. -1      K. -8

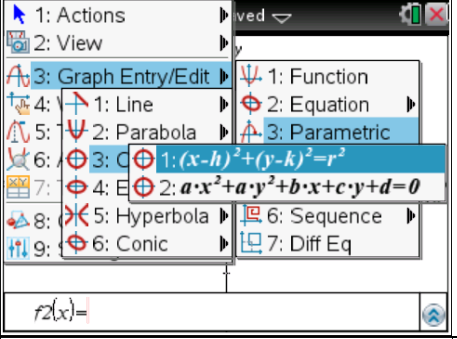
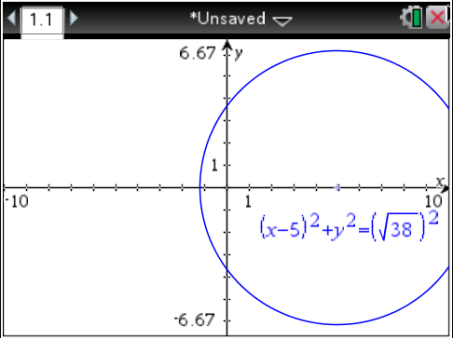
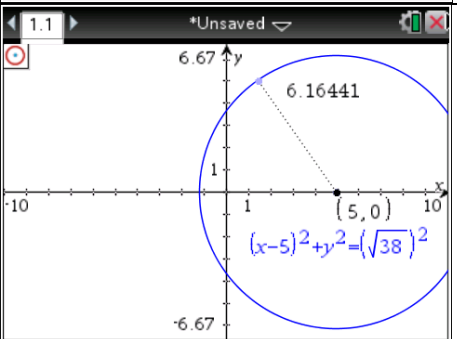
<p>Insert a <b>Graphs</b> page.</p> <p>Type <math>-5x^2 + 9</math> and press <b>enter</b>.</p>	
<p>Press <b>menu</b>&gt;Trace&gt;Graph Trace.</p> <p>Type 1 and press <b>enter</b>. (This jumps the point to the x-value of 1)</p>	
<p>Solve <math>2a = 4</math></p> <p>(Hopefully, you don't need a calculator for this step).</p>	

<http://media.actstudent.org/documents/preparing.pdf>

**Coordinate Geometry - Circles**  
Relations between equations and graphs

A particular circle in the standard  $(x, y)$  coordinate plane has an equation of  $(x - 5)^2 + y^2 = 38$ . What are the radius of the circle, in coordinate units, and the coordinates of the center of the circle?

- | <u>radius</u>  | <u>center</u> | <u>radius</u>  | <u>center</u> |
|----------------|---------------|----------------|---------------|
| F. $\sqrt{38}$ | (5,0)         | H. 38          | (5,0)         |
| G. 19          | (5,0)         | J. $\sqrt{38}$ | (-5,0)        |
|                |               | K. 19          | (-5,0)        |

<p>Insert a <b>Graphs</b> page.</p> <p>Press <span style="border: 1px solid black; padding: 0 2px;">menu</span>&gt;Graph Entry/Edit&gt;Equation&gt;Circle&gt;  <math>(x - h)^2 + (y - k)^2 = r^2</math></p>	
<p>Type 5 for <math>h</math>, 0 for <math>k</math>, and <math>\sqrt{38}</math> for <math>r</math>.</p> <p>Press <span style="border: 1px solid black; padding: 0 2px;">enter</span> to graph the circle.</p>	
<p>Press <span style="border: 1px solid black; padding: 0 2px;">menu</span>&gt;Analyze Graph&gt;Analyze Conics&gt;radius (Click once on the circle and again to place the measurement).</p> <p>Press <span style="border: 1px solid black; padding: 0 2px;">menu</span>&gt;Analyze Graph&gt;Analyze Conics&gt;Center (click twice like before)</p> <p>Since 6.16441 is approximately <math>\sqrt{38}</math>, you have found the answer.</p>	

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## Intermediate Algebra - System of Equations

### Graphing a system of equations

The equations below are linear equations of a system where  $a$ ,  $b$ , and  $c$  are positive integers.

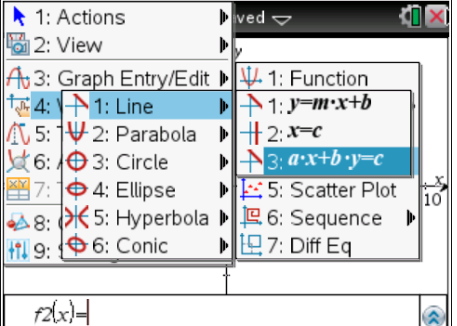
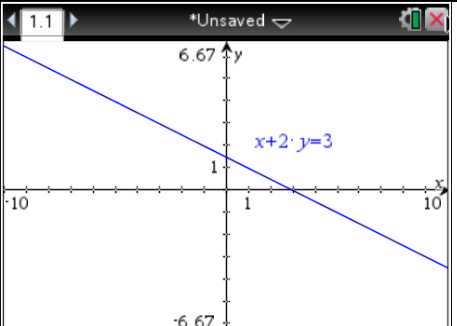
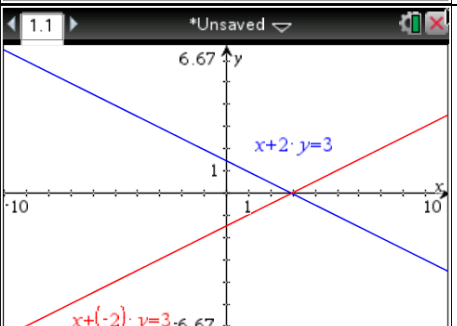
$$ay + bx = c$$

$$ay - bx = c$$

Which of the following describes the graph of at least 1 such system of equations in the standard  $(x, y)$  coordinate plane?

- I. 2 parallel lines
- II. 2 intersecting lines
- III. A single line

- A. I only      B. II only      C. III only      D. I or II only      E. I, II, or III

<p>Choose values for <math>a</math>, <math>b</math> and <math>c</math> so that you can graph each equation.</p> <p>Let's set <math>a = 1</math>, <math>b = 2</math> and <math>c = 3</math></p> <p>Press <b>menu</b> &gt; Graph Entry/Edit &gt; Equation &gt; Line &gt; <math>a \cdot x + b \cdot y = c</math></p>	
<p>Type 1, 2 and 3 in the appropriate spots.</p> <p>Press <b>enter</b> to graph the line.</p>	
<p>Press <b>tab</b> to open the Entry Line.</p> <p>Type 1, -2 and 3 in the appropriate spots.</p> <p>Press <b>enter</b> to graph the line.</p>	

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## Intermediate Algebra - System of Equations

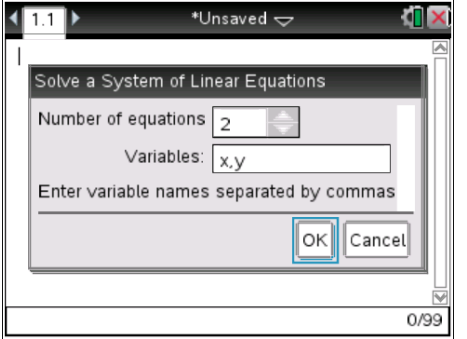
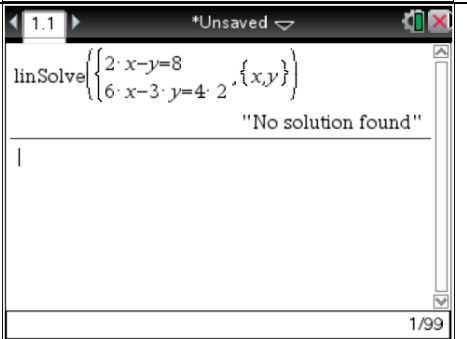
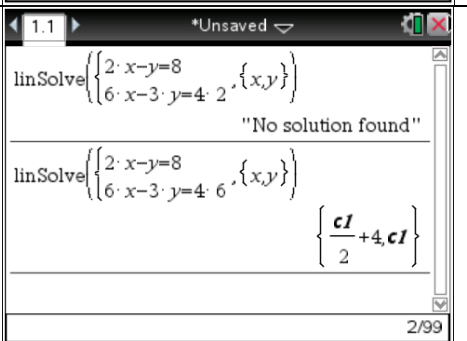
Solving a system of equations

For what value of  $a$  would the following system of equations have an infinite number of solutions?

$$2x - y = 8$$

$$6x - 3y = 4a$$

- A. 2      B. 6      C. 8      D. 24      E. 32

<p>Press <b>menu</b>&gt;Algebra&gt;Solve System of Equations</p> <p>Click <b>OK</b> since the default choices are correct.</p>	
<p>Type the first equation, <math>2x - y = 8</math>, then type the second equation and substitute the first answer choice for <math>a</math>, <math>6x - 3y = 4 \cdot 2</math></p> <p>Press <b>enter</b> to find the solution.</p>	
<p>Copy and paste the previous command by clicking <b>▲</b> on the Touchpad until the previous command is highlighted, press <b>enter</b> to paste the command.</p> <p>Now, edit the command so that the 2nd answer choice is substituted for <math>a</math>. (the <b>c1</b> indicates an infinite number of solutions)</p>	

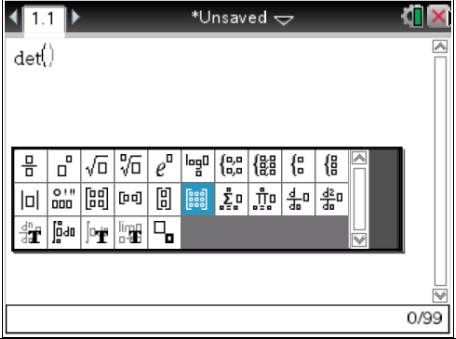
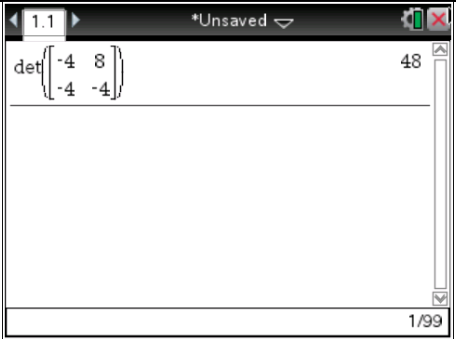
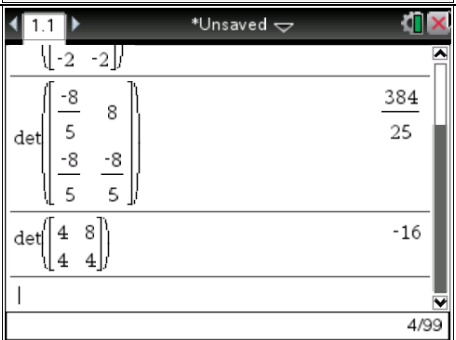
<http://media.actstudent.org/documents/preparing.pdf>

## Intermediate Algebra - Matrices

### Finding the Determinant of a Matrix

The determinant of a matrix  $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$  equals  $ad - cb$ . What must be the value of  $x$  for the matrix  $\begin{bmatrix} x & 8 \\ x & x \end{bmatrix}$  to have a determinant of  $-16$  ?

- A.  $-4$       B.  $-2$       C.  $-\frac{8}{5}$       D.  $\frac{8}{3}$       E.  $4$

<p>Press <b>menu</b> &gt; Matrix &amp; Vector &gt; Determinant.</p> <p>Press <b>2x2</b> and choose the <math>2 \times 2</math> matrix shown.</p>	
<p>Substitute the first answer choice for <math>x</math> and type the matrix, <math>\begin{bmatrix} -4 &amp; 8 \\ -4 &amp; -4 \end{bmatrix}</math></p> <p>Press <b>enter</b> to find the determinant of the matrix.</p>	
<p>Copy and paste the previous command by clicking <b>▲</b> on the Touchpad until the previous command is highlighted, press <b>enter</b> to paste the command.</p> <p>Now, edit the command so that the 2nd answer choice is substituted for <math>x</math>. (Repeat with all the answer choices)</p>	

<http://media.actstudent.org/documents/preparing.pdf>

## Pre-Algebra - Greatest Common Factor

Basic Operations Using Whole Numbers

What is the greatest common factor of 42,126 and 210 ?

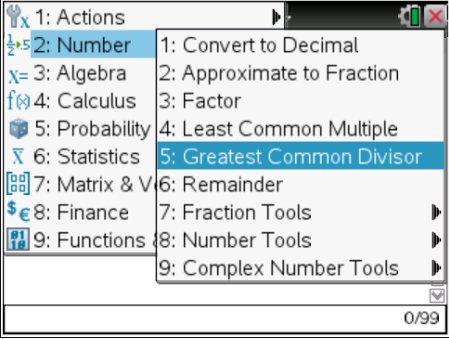

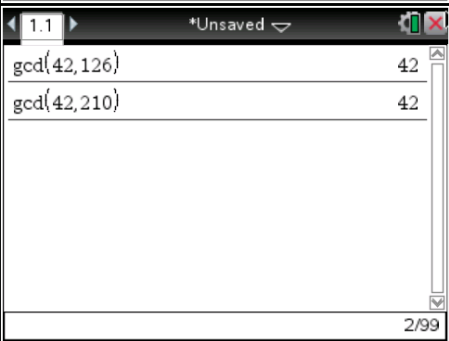
F. 2

G. 6

H. 14

J. 21

K. 42

<p>Press <b>menu</b>&gt;Number&gt;Greatest Common Divisor.</p>	 <p>A screenshot of a calculator's menu system. The 'Number' menu is open, and 'Greatest Common Divisor' is highlighted in blue. Other options include 'Convert to Decimal', 'Approximate to Fraction', 'Factor', 'Least Common Multiple', 'Remainder', 'Fraction Tools', 'Number Tools', and 'Complex Number Tools'.</p>
<p>Then type 42,126 and press <b>enter</b>.</p> <p>Now, we are going to find the GCF of the <u>answer you just calculated</u> and the 3rd number.</p>	 <p>A screenshot of a calculator window titled '1.1 *Unsaved'. The input field contains 'gcd(42, 126)' and the output field shows the result '42'.</p>
<p>Press <b>menu</b>&gt;Number&gt;Greatest Common Divisor.</p> <p>Type 42,210 and press <b>enter</b>.</p>	 <p>A screenshot of a calculator window titled '1.1 *Unsaved'. The input field contains 'gcd(42, 126)' with the result '42' shown. Below it, the input field contains 'gcd(42, 210)' with the result '42' shown.</p>

[http://www.actstudent.org/sampletest/math/math\\_01.html](http://www.actstudent.org/sampletest/math/math_01.html)

## Coordinate Geometry - Slope

Finding the slope of a linear line

What is the slope of any line parallel to the line  $9x + 4y = 7$ ?

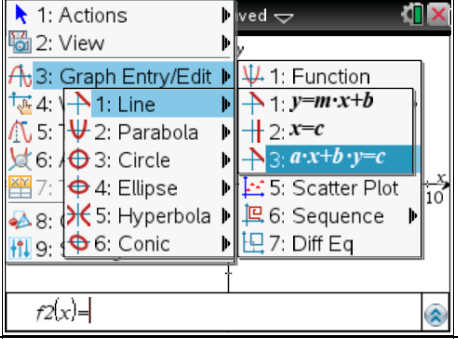
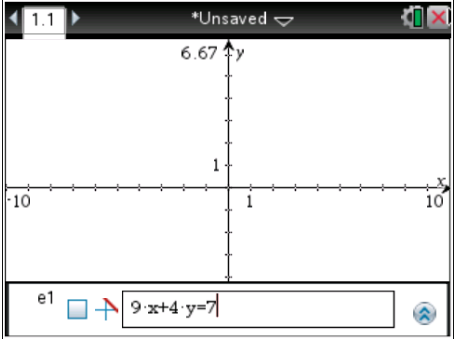
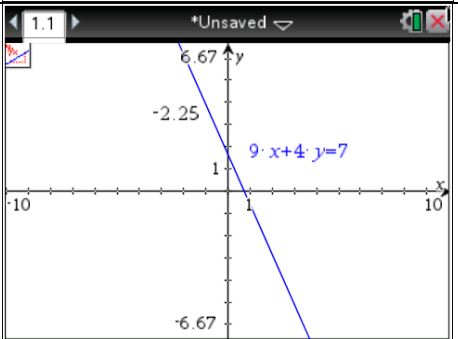
F.  $-9$

G.  $\frac{-9}{4}$

H.  $\frac{9}{7}$

J.  $7$

K.  $9$


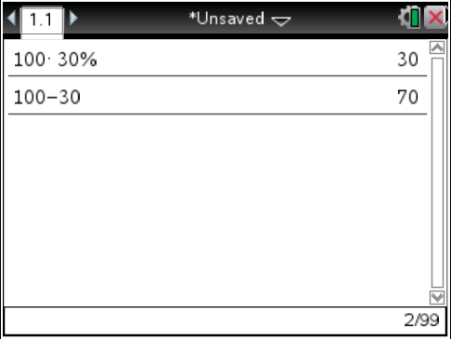
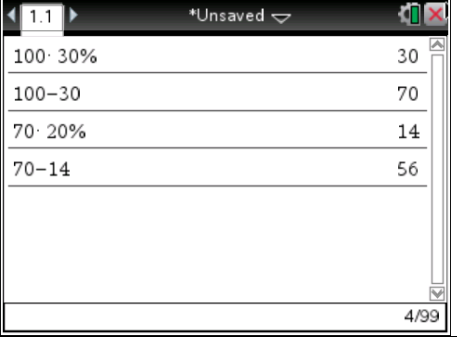
<p>Press <b>menu</b> &gt; Graph Entry/Edit &gt; Equation &gt; Line &gt; <math>ax+by=c</math>.</p>	
<p>Then type 9,4,7 in the blanks. (Use the <b>tab</b> key to jump from one to the next).</p> <p>Press <b>enter</b> to graph the function.</p>	
<p>Press <b>menu</b> &gt; Geometry &gt; Measurement &gt; Slope.</p> <p>Click once on the graph and click once more to place the slope measurement on the screen.</p>	

[http://www.actstudent.org/sampletest/math/math\\_02.html](http://www.actstudent.org/sampletest/math/math_02.html)

**Pre-Algebra - Percent**  
 Converting percent to decimal

A DVD player with a list price of \$100 is marked down 30%. If John gets an employee discount of 20% off the sale price, how much does John pay for the DVD player?

- A. \$86.00      B. \$77.60      C. \$56.00      D. \$50.00      E. \$44.00

<p>Type 100 <input type="text" value="x"/> 30</p> <p>Press <input type="text" value="ctrl"/> <input type="text" value="="/> and choose the % symbol, then press <input type="text" value="enter"/>.</p>	
<p>Subtract the amount of the first discount from the original price.</p>	
<p>Repeat the process to find the total after the second discount.</p>	

[http://www.actstudent.org/sampletest/math/math\\_02.html](http://www.actstudent.org/sampletest/math/math_02.html)

## Intermediate-Algebra - Complex Numbers

Evaluating expressions

12.  $\sqrt{-(-9)^2} = ?$

(Note:  $i = \sqrt{-1}$ )


F.  $9i$

G.  $9 + i$

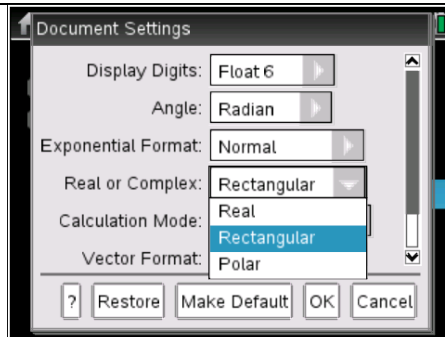
H.  $9 - i$



J.  $9$

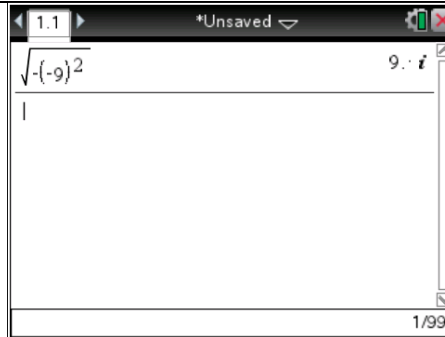
K.  $-9$

Change the settings in your handheld.  
Press  > Settings > Document Settings.

Change *Real or Complex* to **Rectangular**.  
(This allows the handheld to produce complex answers). Click **Make Default** to change the scratchpad settings at the same time.



Type the expression.  
Press   to type the square root template.



[http://www.actstudent.org/sampletest/math/math\\_02.html](http://www.actstudent.org/sampletest/math/math_02.html)

## Coordinate Geometry - Midpoints

Find the midpoint given two ordered pairs

In the standard  $(x, y)$  coordinate plane, what are the coordinates of the midpoint of a line segment whose endpoints are  $(-3, 0)$  and  $(7, 4)$  ?

- A.  $(2, 2)$       B.  $(2, 4)$       C.  $(5, 2)$       D.  $(5, 4)$       E.  $(5, 5)$

<p>Press <b>menu</b> &gt; Geometry &gt; Points &amp; Lines &gt; Segment.</p> <p>Hover over the icon in the top left corner of the screen and you will see the hint about pressing "(" and then the coordinates to plot the segment.</p>	
<p>Press <b>(</b>, then enter the x-value, <math>-3</math>. Press <b>enter</b>, then enter the y-value, <math>0</math>.</p> <p>Repeat to enter the 2nd ordered pair. Press <b>(</b>, then enter the x-value, <math>7</math>. Press <b>enter</b>, then enter the y-value, <math>4</math>.</p>	
<p>Press <b>menu</b> &gt; Geometry &gt; Construction &gt; Midpoint, then click the segment.</p> <p>Use the Touchpad to hover your cursor over the midpoint and press <b>ctrl</b> <b>menu</b> &gt; Coordinates &amp; Equations.</p>	

[http://www.actstudent.org/sampletest/math/math\\_03.html](http://www.actstudent.org/sampletest/math/math_03.html)

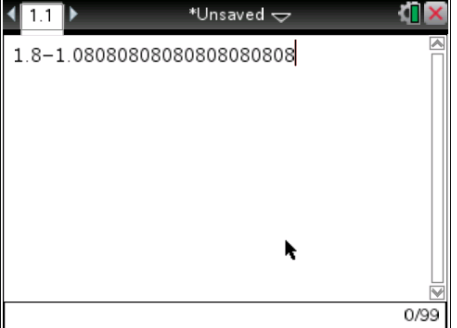

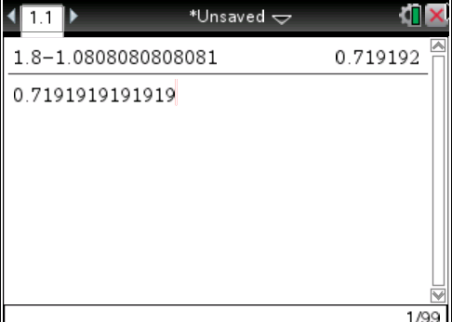


**Pre-Algebra - Decimals**  
Basic operations with decimals

What is the difference between 1.8 and  $1.\overline{08}$  ?

(Note: A bar indicates a digit pattern that is repeated.)

- A.  $0.7\overline{1}$       B.  $0.\overline{71}$       C.  $0.7\overline{19}$       D.  $0.7\overline{2}$       E.  $0.\overline{72}$

<p>Type 1.8 – 1.080808080808080808080808</p>	
<p>Press <b>enter</b>.</p> <p>Use the Touchpad to click up and highlight the calculated answer.</p>	
<p>Press <b>enter</b> to see more digits.</p>	

[http://www.actstudent.org/sampletest/math/math\\_03.html](http://www.actstudent.org/sampletest/math/math_03.html)

## Intermediate-Algebra - Zeros

Finding roots of polynomials

What is the  $x$  -intercept of the graph of  $y = x^2 - 4x + 4$  ?

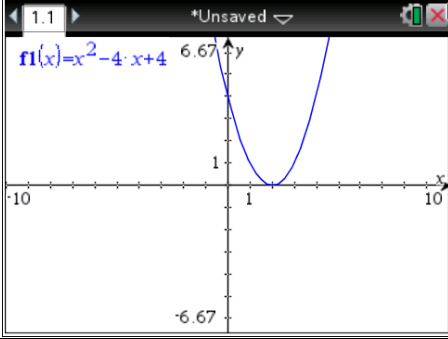
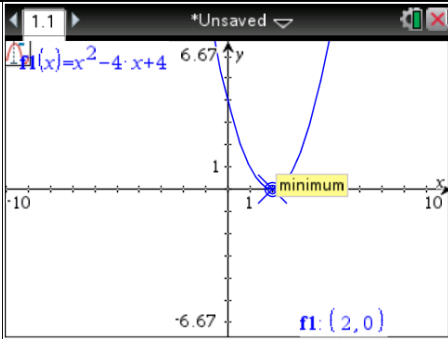
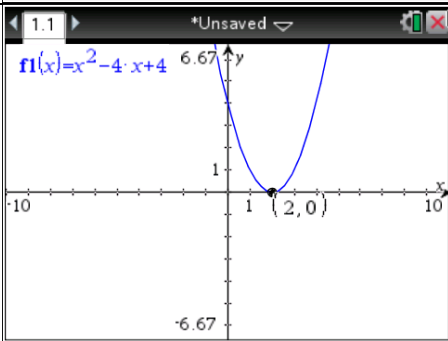
A.  $-2$

B.  $-1$

C.  $0$

D.  $1$

E.  $2$

<p>Type the function, <math>f1(x) = x^2 - 4x + 4</math> into the entry line and press <b>enter</b> to graph it.</p>	
<p>Press <b>menu</b> &gt; Trace &gt; Graph Trace. Use the Touchpad to move to the right until it shows the minimum.</p>	
<p>Press <b>enter</b> to lay down the ordered pair for the zero of the graph.</p>	

[http://www.actstudent.org/sampletest/math/math\\_04.html](http://www.actstudent.org/sampletest/math/math_04.html)

## Intermediate Algebra - Function Composition

Composing functions

If  $h(x) = x^3 + x$  and  $g(x) = 2x + 3$ , then  $g(h(2)) = ?$

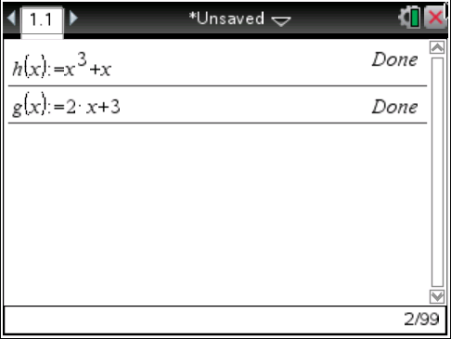
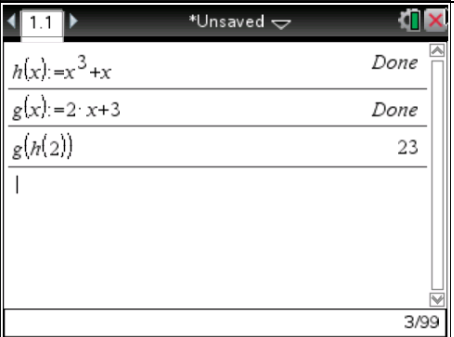
F. 7

G. 10

H. 17

J. 19

K. 23

<p>Type <math>h(x)</math>, then press <b>ctrl</b> <b> </b> <b>{</b> (this types a :=). Then type the function, <math>x^3 + x</math>. Press <b>enter</b>.</p> <p>Type <math>g(x)</math>, then press <b>ctrl</b> <b> </b> <b>{</b> (this types a :=). Then type the function, <math>x^3 + x</math>. Press <b>enter</b>.</p>	 <p>A screenshot of a calculator interface with a title bar that says '*Unsaved'. The interface shows two lines of input: <math>h(x) := x^3 + x</math> and <math>g(x) := 2 \cdot x + 3</math>. Each line has a 'Done' button to its right. The bottom right corner of the window shows '2/99'.</p>
<p>Type <math>g(h(2))</math> and press <b>enter</b>.</p>	 <p>A screenshot of a calculator interface with a title bar that says '*Unsaved'. The interface shows three lines of input: <math>h(x) := x^3 + x</math>, <math>g(x) := 2 \cdot x + 3</math>, and <math>g(h(2))</math>. The value '23' is displayed next to the third line. The bottom right corner of the window shows '3/99'.</p>

[http://www.actstudent.org/sampletest/math/math\\_04.html](http://www.actstudent.org/sampletest/math/math_04.html)

## Pre-Algebra - Scientific Notation

Calculations involving scientific notation

A particle travels  $1 \times 10^6$  meters per second in a straight line for  $5 \times 10^{-6}$  seconds. How many meters has it traveled?

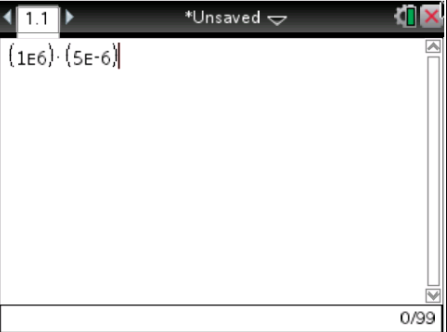

A.  $2 \times 10^{11}$

B.  $5 \times 10^{12}$

C.  $5 \times 10^{-12}$

D. 5

E.  $5 \times 10^{-36}$

<p>Type 1, then type <b>EE</b> followed by the exponent, 6.</p> <p>Type 5, then type <b>EE</b> followed by the exponent, -6.</p> <p><b>(Note: <math>1E6 = 1 \times 10^6</math>)</b></p>	 <p>The screenshot shows a calculator window titled '*Unsaved'. The input field contains the expression <math>(1E6) \cdot (5E-6)</math>. The status bar at the bottom right shows '0/99'.</p>
<p>Press <b>enter</b>.</p>	 <p>The screenshot shows the same calculator window. The input field now contains <math>1000000. \cdot 5.E-6</math>. The status bar at the bottom right shows '1/99'.</p>

[http://www.anlyzemath.com/practice\\_tests/act/act\\_sample\\_1.html](http://www.anlyzemath.com/practice_tests/act/act_sample_1.html)

## Intermediate Algebra - Roots of Polynomials

Finding roots of polynomials

How many solutions are there to the equation  $x^2 - 7 = 0$  ?

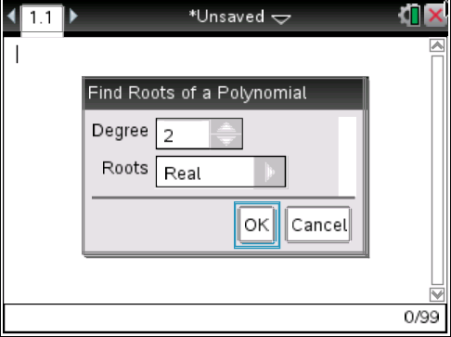
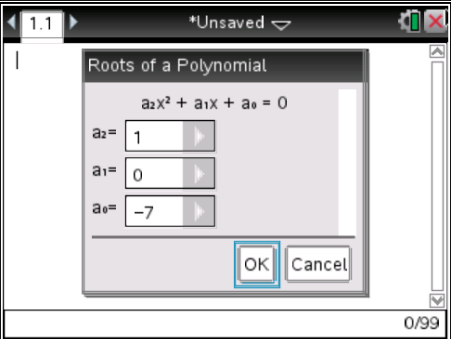
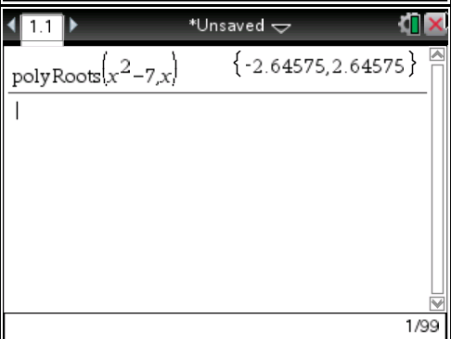
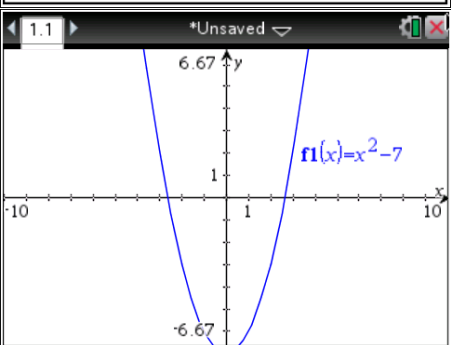
A. 1

B. 2

C. 4

D. 7

E. 14

<p>Unlike the <b>Nsolve()</b> command, the <b>Polynomial Tools</b> can produce <u>multiple</u> solutions.</p> <p>Press <b>menu</b> &gt; Algebra &gt; Polynomial Tools &gt; Find Roots of a Polynomial. Set the degree to 2 (default) and click OK.</p>	
<p>Enter the coefficients/constants for the given polynomial.</p> <p>Then click OK.</p>	
<p>Press <b>enter</b>. There are 2 solutions in the set.</p> <p>Note: CAS handhelds will produce the exact solutions of <math>\pm\sqrt{7}</math>.</p>	
<p>Alternatively, a graph of the function shows that there are two <math>x</math> -intercepts (therefore two solutions).</p>	

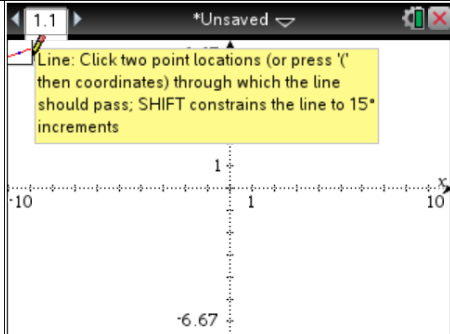
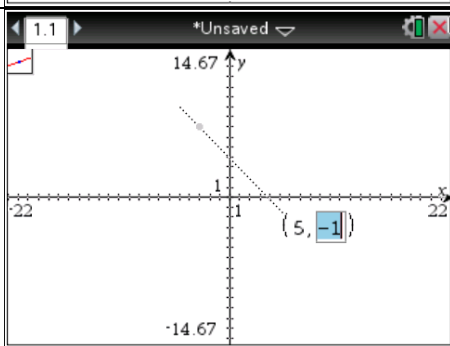
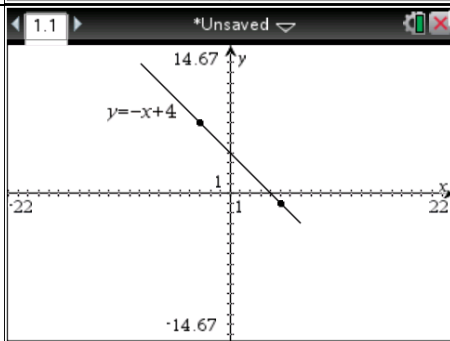
## Coordinate Geometry - Equation of a Line

Linear equations in two variables

What is the equation of the line that contains the points with  $(x, y)$  coordinates  $(-3, 7)$  and  $(5, -1)$  ?

A.  $y = 3x - 2$       B.  $y = x + 10$       C.  $y = \frac{-1}{3}x + 8$

D.  $y = \frac{-3}{2}x + 8$       E.  $y = -x + 4$

<p>Press <b>[menu]</b>&gt;Geometry&gt;Points &amp; Lines&gt;Line.</p> <p>Hover over the icon in the top left corner of the screen and you will see the hint about pressing “(” and then the coordinates to plot the segment.</p>	
<p>Press <b>(</b>, then enter the x-value, <math>-3</math>. Press <b>enter</b>, then enter the y-value, <math>7</math>.</p> <p>Repeat to enter the 2nd ordered pair. Press <b>(</b>, then enter the x-value, <math>5</math>. Press <b>enter</b>, then enter the y-value, <math>-1</math>.</p>	
<p>Use the Touchpad to hover your cursor over the line and press <b>[ctrl]</b> <b>[menu]</b>&gt;Coordinates &amp; Equations.</p>	

<http://www.act.org/compass/sample/algebra.html>

## Pre-Algebra - Prime Numbers

Determining prime numbers

Which of the following lists gives the 3 largest prime numbers that are less than 50 ?



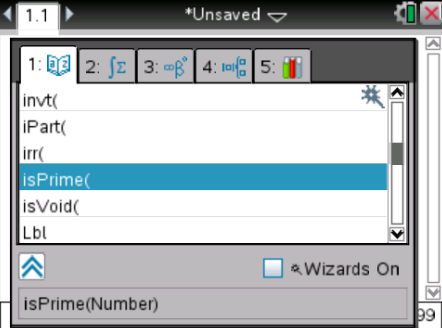





A. 5,7 and 11

B. 7,11 and 13

C. 41,43 and 47

D. 39,43 and 47

E. 43,47 and 49

<p>TI-Nspire has a built in command for determining a prime number.</p> <p>Press  to access the catalog, then press  to jump to the commands that start with the letter i. Scroll down to the <i>isPrime()</i> command.</p>	 <p>The screenshot shows the TI-Nspire catalog interface. The 'isPrime()' command is highlighted in blue. Other visible commands include invt(), iPart(), irr(), isVoid(), and Lbl. The 'isPrime(Number)' command is also visible at the bottom of the screen.</p>								
<p>Press  and type in the number, 49. Press  again to find out if it is prime.</p> <p>Use the Touchpad to click up and highlight the previous command. (Press  to paste the command onto the next line.)</p>	 <p>The screenshot shows the TI-Nspire interface with the command <code>isPrime(49)</code> entered and the result <code>false</code> displayed. The cursor is positioned at the end of the line.</p>								
<p>Use the <i>isPrime()</i> command to test more of the numbers.</p>	 <p>The screenshot shows the TI-Nspire interface with a list of <code>isPrime()</code> commands and their results:</p> <table border="1"><tbody><tr><td><code>isPrime(49)</code></td><td><code>false</code></td></tr><tr><td><code>isPrime(47)</code></td><td><code>true</code></td></tr><tr><td><code>isPrime(43)</code></td><td><code>true</code></td></tr><tr><td><code>isPrime(41)</code></td><td><code>true</code></td></tr></tbody></table>	<code>isPrime(49)</code>	<code>false</code>	<code>isPrime(47)</code>	<code>true</code>	<code>isPrime(43)</code>	<code>true</code>	<code>isPrime(41)</code>	<code>true</code>
<code>isPrime(49)</code>	<code>false</code>								
<code>isPrime(47)</code>	<code>true</code>								
<code>isPrime(43)</code>	<code>true</code>								
<code>isPrime(41)</code>	<code>true</code>								

<http://www.education.com/reference/article/posttest39/>

## Coordinate Geometry - $f(y)$ Equations

Relationship between points & lines

In the  $xy$  coordinate plane below, which of the following points has coordinates  $(x, y)$  such that  $x = y - 2$  ?

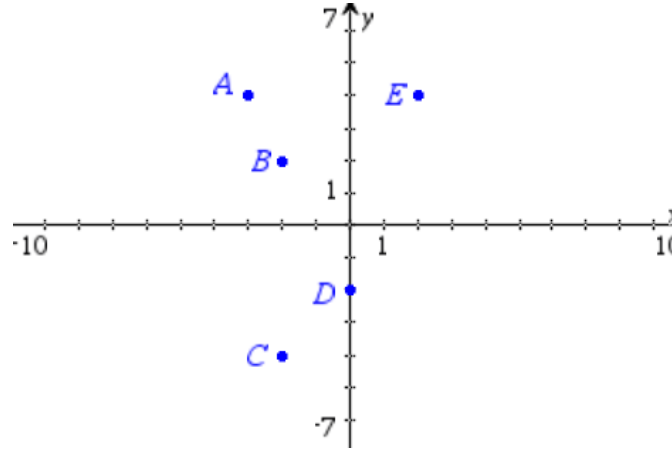
F. A

G. B

H. C

J. D

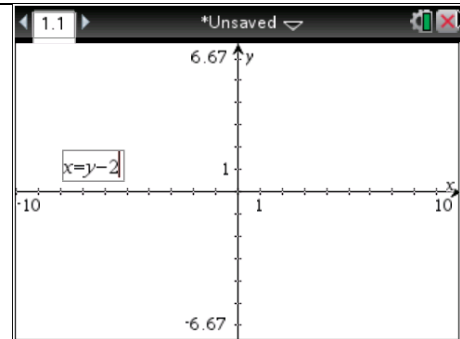
K. E



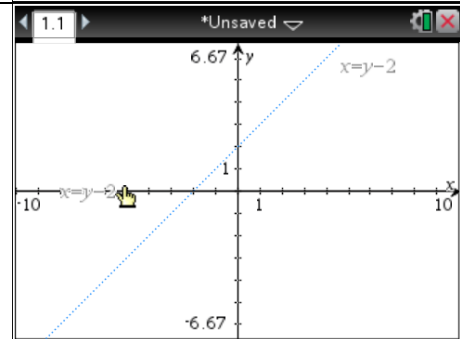
Move your cursor to an empty space and press

**ctrl** **menu** > Text. Type,  $x = y - 2$  and press

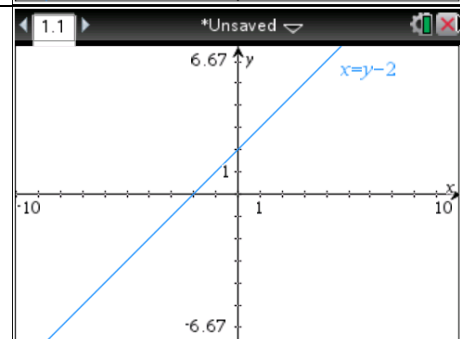
**enter**.



Grab (**ctrl** ) the equation text box and use the Touchpad to drag and drop it on the  $x$  -axis.



Press **menu** > Trace > Graph Trace. Type, 4 to substitute a  $y$  -value of 4.



<http://www.education.com/reference/article/posttest39/>



## Intermediate Algebra - Logarithms

Evaluating logarithms with base other than 10

Which of the following is a value that satisfies  $\log_6(216) = x$  ?


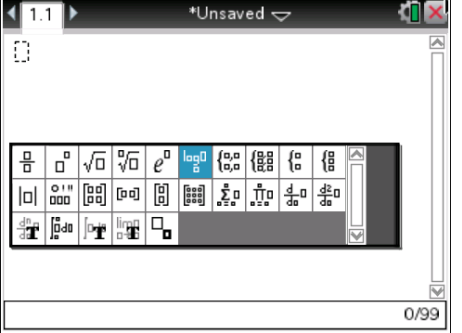


A. 0

B. 1

C. 2

D. 3

E. 4

<p>Press  and choose the logarithm template.</p>	
<p>Type in the base and the number to take the log of, then press .</p>	

<http://www.education.com/reference/article/posttest39/>

## Coordinate Geometry - Distance

Using the distance formula

What is the distance, in coordinate units, between the points  $(-4, 3)$  and  $(7, -2)$  in the standard  $(x, y)$  coordinate plane?

A.  $\sqrt{14}$

B.  $\sqrt{98}$

C.  $\sqrt{146}$

D. 15

E. 21

<p>Press <b>menu</b>&gt;Geometry&gt;Points &amp; Lines&gt;Segment.</p> <p>Hover over the icon in the top left corner of the screen and you will see the hint about pressing "(" and then the coordinates to plot the segment.</p>	
<p>Press <b>(</b>, then enter the x-value, <math>-4</math>. Press <b>enter</b>, then enter the y-value, <math>3</math>.</p> <p>Repeat to enter the 2nd ordered pair. Press <b>(</b>, then enter the x-value, <math>7</math>. Press <b>enter</b>, then enter the y-value, <math>-2</math>.</p>	
<p>Use the Touchpad to hover your cursor over the segment and press <b>ctrl menu</b>&gt;Measurement&gt;Distance.</p>	

<http://www.education.com/reference/article/posttest39/>