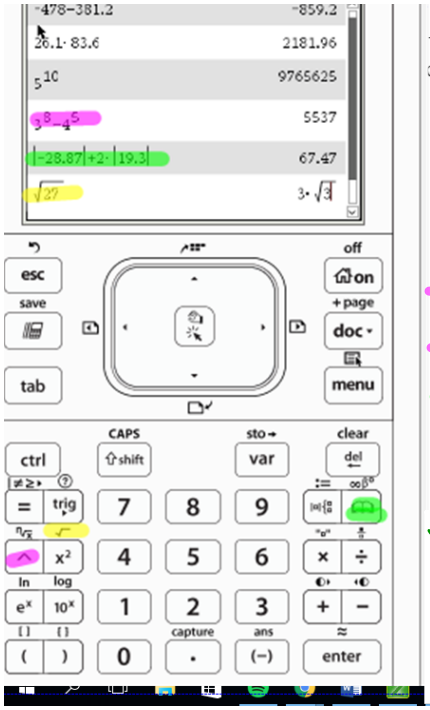


TI – Nspire Practice

ULATOR

pen up a new calculator document, or use the quick calculator.

Do the following problems on your calculator:

a. −478 − 381.2 _____

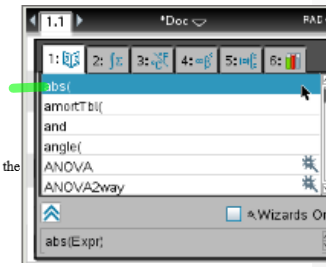
b. 26.1 times 83.6 _____

c. 5^{10} _____

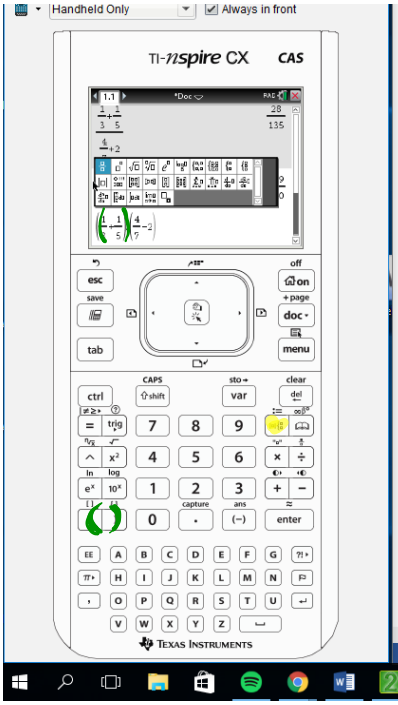
d. $3^8 - 4^5$ _____ (Make sure your screen matches the

e. $|-28.87| + 2|19.3|$ _____

f. $\sqrt{27}$ _____ (There are two ways of doing this)



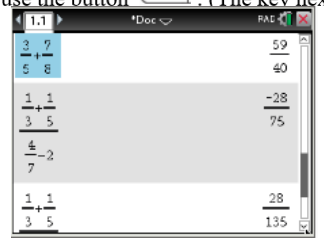
groups of 2. $\sqrt{27} = 3\sqrt{3}$ → decimal ≈ 5.19615 (ctrl) (enter)



2. Fractions look pretty neat on the Nspine and can be entered in a variety of wa way is to use the division sign. For example, 2/3 is the same as 2 divided by complicated fraction, it may be easier to use the button . (The key next

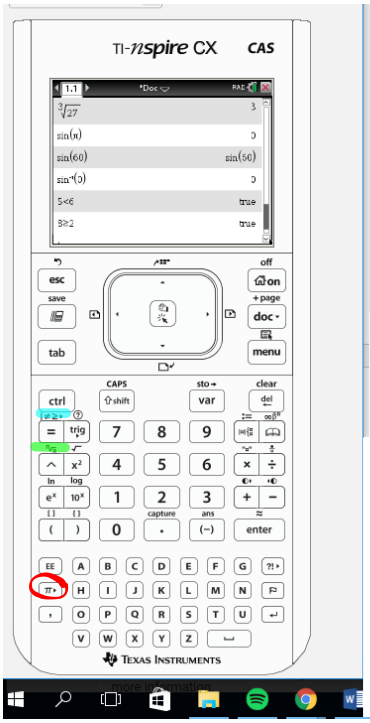
a. $\frac{3}{5} + \frac{7}{8} =$ _____

b. $\frac{\left(\frac{1}{3}+\frac{1}{5}\right)}{\left(\frac{4}{7}-2\right)} =$ _____



c. What is your answer from above in decimal form? (Hint: Press "Ctrl" "E

d. Oops! I made a mistake. I really meant to write +2 instead of -2. Instead arrow UP to the problem and press enter. Now arrow over and fix the mis answer? _____



3. Other mathematical symbols

a. Enter $5 < 6$ in the calculator. What is the calculator output? true

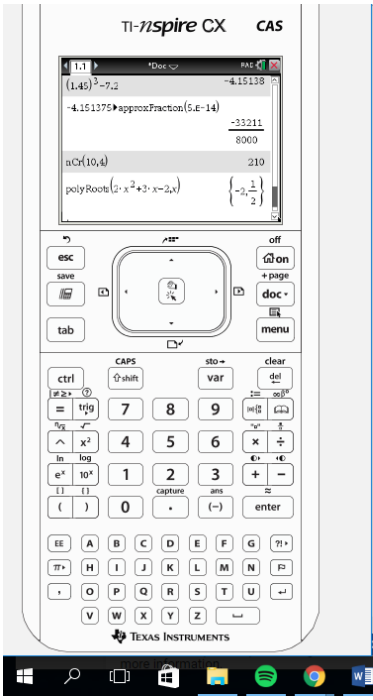
Enter $8 \geq 2$. What is the calculator output? _____

b. $\sqrt[3]{27}$ = _____ groups of 3 $\sqrt[3]{27}$ = 3 (3, 3, 3)

c. $\sin(\pi)$ = _____

$\sin(60^\circ)$ = _____ (Hint: the answer is NOT -0.304811)

$\sin^{-1}(0)$ = _____

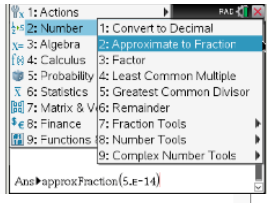


4. Other useful tools.

a. $1.45^3 - 7.2$ = _____ (Hint: it is NOT 2.10017)

What is the answer expressed as a fraction? _____

(Go to MENU→ 2: Number→2: Approximate to a fraction)



b. Compute the number of different combinations of committees that can be formed people and want to make a committee of 4. (Hint: Look in MENU under Probability)

You will put it in your calculator as nCr (10,4) = _____

*some old calculators: 10 nCr 4

c. Solve $2x^2 + 3x - 2 = 0$. Go to MENU→ 3:Algebra → 3: Polynomial Tools → 1: Find Roots of Polynomial

(Note: You have to specify whether the roots are real or complex, in this case they would be real)

x = -2 and x = $\frac{1}{2}$ or .5

without calculator:

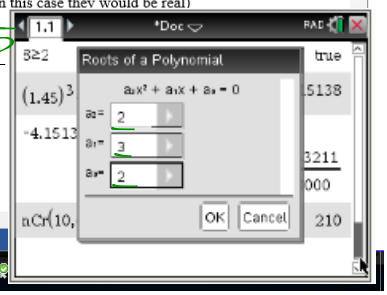
$2x^2 + 3x - 2$

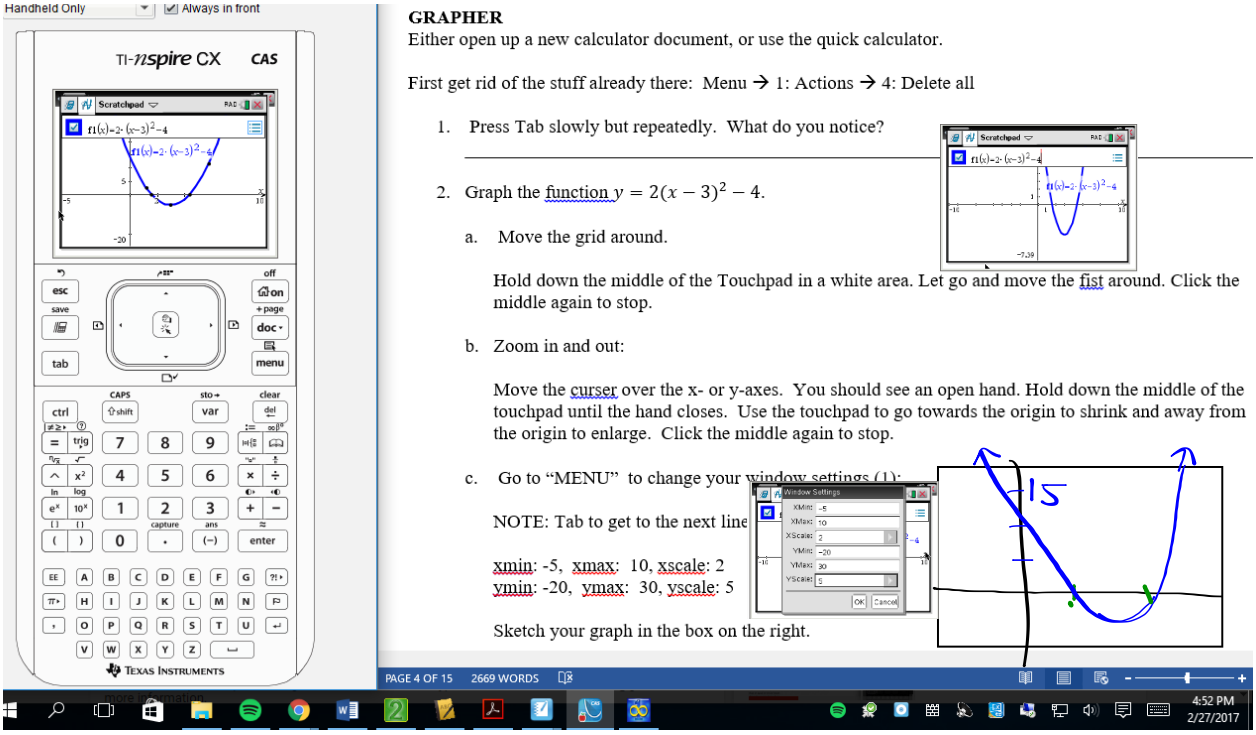
$(x+2)(2x-1) = 0$

$x + 2 = 0$ $\quad 2x - 1 = 0$

$x = -2$ $\quad 2x = 1$

$x = \frac{1}{2}$





GRAPHER

Either open up a new calculator document, or use the quick calculator.

First get rid of the stuff already there: Menu → 1: Actions → 4: Delete all

1. Press Tab slowly but repeatedly. What do you notice?

2. Graph the function $y = 2(x-3)^2 - 4$.

   a. Move the grid around.

   Hold down the middle of the Touchpad in a white area. Let go and move the fist around. Click the middle again to stop.

   b. Zoom in and out:

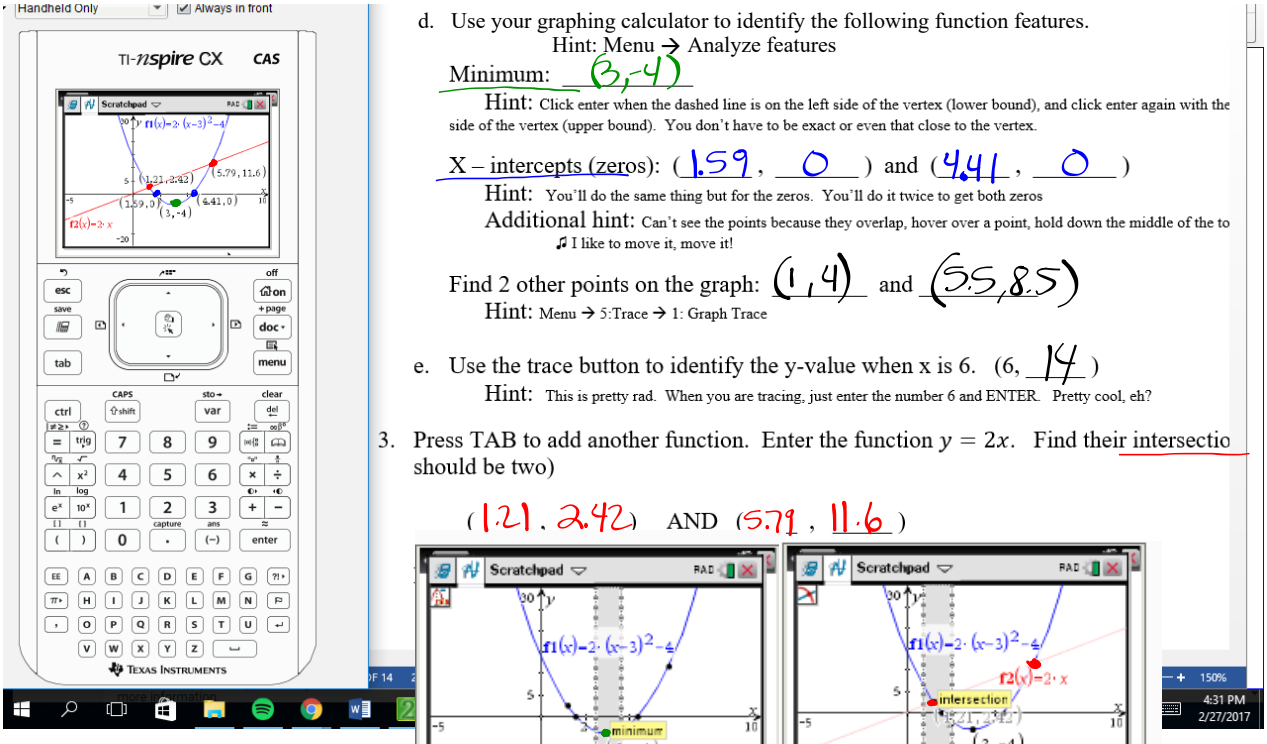
   Move the curser over the x- or y-axes. You should see an open hand. Hold down the middle of the touchpad until the hand closes. Use the touchpad to go towards the origin to shrink and away from the origin to enlarge. Click the middle again to stop.

   c. Go to "MENU" to change your window settings (1):

   NOTE: Tab to get to the next line

   xmin: -5, xmax: 10, xscale: 2
   ymin: -20, ymax: 30, yscale: 5

   Sketch your graph in the box on the right.



d. Use your graphing calculator to identify the following function features.
Hint: Menu → Analyze features

Minimum: (3,-4)

Hint: Click enter when the dashed line is on the left side of the vertex (lower bound), and click enter again with the side of the vertex (upper bound). You don't have to be exact or even that close to the vertex.

X – intercepts (zeros): (1.59 , 0) and (4.41 , 0)

Hint: You'll do the same thing but for the zeros. You'll do it twice to get both zeros

Additional hint: Can't see the points because they overlap, hover over a point, hold down the middle of the te to ♫ I like to move it, move it!

Find 2 other points on the graph: (1, 4) and (5.5, 8.5)

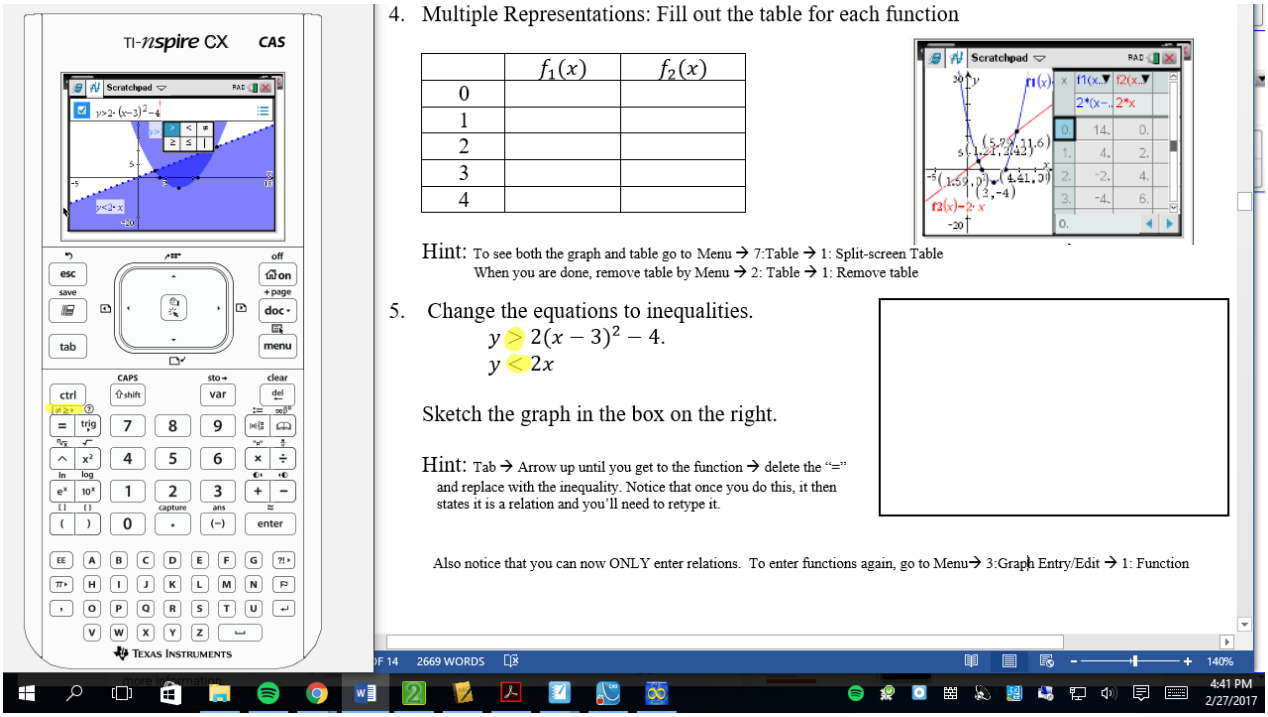
Hint: Menu → 5:Trace → 1: Graph Trace

e. Use the trace button to identify the y-value when x is 6. (6, 14)

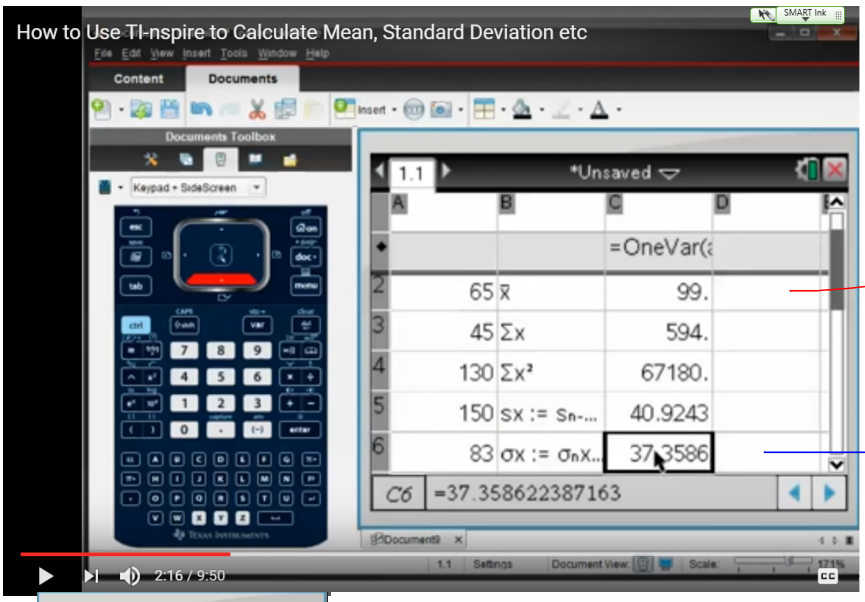
Hint: This is pretty rad. When you are tracing, just enter the number 6 and ENTER. Pretty cool, eh?

3. Press TAB to add another function. Enter the function $y = 2x$. Find their intersectio should be two)

(1.21 , 2.42) AND (5.79 , 11.6)

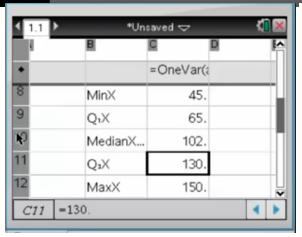


Stats Video: https://www.youtube.com/watch?v=ualo0U31K5c



average = mean

stand deviation, tells how spread out the data is. averages the distance from each point to the average/mean. So how close to average are the points on average.



121, 65, 45, 130, 150, 83

IQR = UQ − LQ
Q_3 Q_1
130 − 65 = 65

TO THE RACES!

Objective:
I will use mathematical tools to model mathematics and determine features of functions in context.

Baby Mario

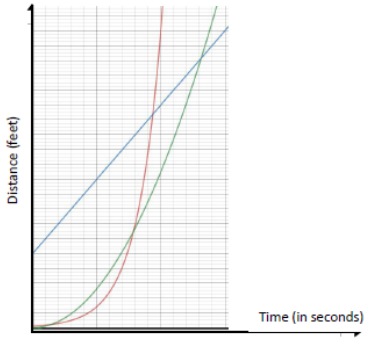
Yoshi

Bowser

Baby Mario, Yoshi, and Bowser are off to the races! Since Baby Mario is slower, they decide to give him the largest head start. Boswer is the heaviest so it takes him the longest to get going from the start line so he also gets a little head start.

1. The following equation represent the racer's distance, in feet, with respect to time, t in seconds. Match each equation to the correct racer.

2. Show as sketch of your graph below. Remember to label your axes!



3. How much of head start did the racers get? Baby Mario: _____ 50 feet Bowser: ____ 1 foot

4. Who was in the lead:

   a. At 5 seconds? _____ Baby Mario
   b. At 10 seconds? _____ Boswer
   c. At 15 seconds? _____ Bowser

5. Baby Mario is the slowest so both Yoshi and Bowswer eventually caught up and passed him.

   a. Who passed him first? YOSHI or BOWSER (Circle one) Bowser

   b. At what time did **Yoshi** pass him? _____ seconds About 13 seconds

   c. How many feet along the race were they when **Yoshi** passed Baby Mario? _____ feet

   181 feet

6. Describe the race in detail. Include who is ahead at the start, when racers are speeding up/slowing down/or constant, and any times when the racers pass each other. (There should be 4 times when the racers pass each other)

Hint: To find intersections with more than 2 functions, go to MENU→6:Analyze Graph → 4:Intersection, then for the two functions that you want to find the intersection of, click on each function, then do the lower bound, upper bound as you did before.

Baby Mario is in the lead at the start with bowser just a foot ahead of Yoshi at the starting line. Boswer and Yoshi are both slow movers, with Yoshi passing up bowser after 1.42 seconds. Bowser starts picking up the pace and whips past Yoshi at 7.87 seconds after going 65 feet. All this time, Baby Bowser had been moving at a constant rate and has been leading. With Yoshi and Bowser speeding up, Bowser passes Baby Mario at 9.36 seconds and Yoshi takes a little longer to pass Baby Mario, passing at 13.1 seconds.

7. Conclusion: Who would be the winner of the race if it went on for a LONG time? Give the final order for the finish line of the infinite length race in the boxes below.

1st place: _____ Bowser

2nd place: _____ Yoshi

3rd place: _____ Baby Mario

8. There is a common phrase "Slow and steady wins the race." When given increasing exponential, linear, and quadratic functions in an infinite length race, which function would eventually always win? Explain,

Asssume all functions are increasing.

An exponential will eventually ALWAYS win, followed by a quadratic, then a linear.(assuming they are all increasing) So… Slow and steady doesn't win the race