TI 83/84: Some Graphing Calculator Basics:

Making your screen lighter or darker

Adjust the screen contrast to a comfortable level by pressing [2nd] and then the up arrow or down arrow. The up arrow makes the screen darker; the down arrow makes it lighter.

Doing arithmetic

Do arithmetic on your calculator using the number keys and the [+], [-], [x], [÷] keys. Also notice the parentheses above the [8] and the [9] keys. Your calculator knows the order of operations! Press [ENTER] when you want an answer.

Do these problems ON YOUR CALCULATOR!

Try this one: $2+6\cdot3$ = _____

Explain to your partners why the answer is NOT "2 plus 6 makes 8, times 3 makes 24."

To enter a fraction, just use the divide key: [÷]

Try this one: $2+\frac{6}{3}$ = _____

To get exponents, use the [x^2] key, or use the [^] key.

Try this one: 3^2 = _____

Try this one: 2^3 = _____

Press the [2nd] key to get to the square root (above the [x^2] key).

Try this one: $\sqrt{196}$ = _____

Press the [MATH] key and choose **[1: ▷ Frac]** to change a decimal to a fraction, or choose **[4: $\sqrt[3]{(}$]** to get a cube root.

Change this to a fraction: 0.0375 = _____

Type in the decimal, then [▷ Frac], then press [ENTER].

Try this one: $\sqrt[3]{64}$ = _____

Pay attention to the order of operations!

When you have a complicated fraction, make sure you put parentheses around the top and bottom of the fraction when you enter it in your calculator:

$$\frac{\text{top of fraction}}{\text{bottom of fraction}} = (\text{top of fraction}) / (\text{bottom of fraction})$$

Try these problems <u>on your calculator</u>. Answer fraction problems with a fraction. Round decimals to three places. Circle the correct answer.

(1) $\frac{13}{65}+\frac{27}{40}$ $\frac{12}{5}$ $\frac{1}{9}$ $\frac{7}{8}$ $\frac{15}{4}$	(2) $\sqrt[3]{492}$ 6.001 7.894 2.098 5.279
(3) 3^4-7^3+5 –61 7203 492 –257	(4) $\frac{2^2-17}{3+6\cdot 7}$ $\frac{27}{95}$ $\frac{-13}{45}$ $\frac{2}{3}$ $\frac{6}{51}$

To enter a mixed number in the calculator, use parentheses and a plus sign: $2\frac{1}{3}$ becomes (2+1/3).

Notice that your calculator has the value of π built in. Look for it over the power key [^] .

Try this one: $2\frac{1}{3}-5\frac{1}{2}$ = _____(answer with a fraction)

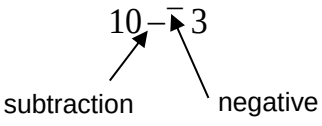
If you got $\frac{-13}{6}$ for this one, go back and figure out what you did wrong!

Try this one: $5+\pi \approx$ _____(round to 3 decimals)

Subtraction versus negative

Subtraction and negative are not the same on your calculator! For subtraction, use the [-] key on the right hand side (between the plus [+] key and the multiply [x] key). For negative (as in a negative number) use the negative key [(-)] , which is below the 3.

Try the expression, "10 minus negative 3," and notice how the subtraction and the negative look different on the calculator screen.



What answer does it give?

Practice for Calculator Arithmetic:

Try these problems in your calculator. Answer fraction problems with a fraction. Round decimals to three places. Circle the correct answer.

(5) $2\frac{1}{3} - 5\frac{2}{7}$

$\frac{-62}{21}$ $\frac{-50}{19}$ $\frac{23}{17}$ $\frac{5}{4}$

(6) $17\pi - 4\frac{2}{3}$

0.236 −12.098 48.740 9.033

(7) $17 - {}^{-}3\pi$

145.074 23.666 1.781 26.425

(8) $\dfrac{2-3\pi}{1\frac{5}{6}}$

−4.050 3.987 0.023 143.015

(9) -5^2

answer with an integer

(10) $(-5)^2$

answer with an integer

(11) Why are the answers to problems 9 and 10 different? Why is the order of operations different? Be specific!

In problem 9, ...

In problem 10, ...

Explain carefully. Write a sentence or two!

Absolute Values

Remember what absolute value does -- it does whatever is inside the absolute value bars (as though they were parentheses), then makes the answer positive. Try these examples without your calculator first.

$|-3| =$ ____ $|7-3| =$ ____ $|3-9| =$ ____ $|5^2-15| =$ ____

To get absolute value on your calculator, press the MATH key, then the right arrow to get NUM, then it's 1:abs on that menu. Put parentheses around the expression that's inside the absolute value. So,

$|3-7|+2$ is put in your calculator as: abs(3 - 7) + 2

(on newer calculators, it will look like $|3-7|+2$ instead.)

What answer does this give? _____

abs(is the first entry in the catalog, so pressing 2nd Catalog ENTER will also get absolute value.

(12) $|4-17^2|+2(4-9)$

17 492 275 2065

(13) $\dfrac{|2^2-17|+4}{22-3^5}$

$\frac{3}{7}$ $\frac{97}{4}$ $\frac{-1}{13}$ $\frac{907}{12}$

Did you remember to put ( )'s around the top and bottom of the fraction?

More Practice for Calculator Arithmetic:

Try these problems in your calculator. Answer with an integer, decimal, or fraction.

(14) $(-3(5-7)+-2)\,6 \div 16 - 15 =$

(15) $\dfrac{2^3-3^2}{4\cdot 6-5^2} =$

(16) $10 - 2|\,4 - 11| =$

Try these problems in your calculator, and answer with a fraction.

(17) $\dfrac{4\cdot -2+6}{37(-2)} =$

(18) $\frac{-3}{4} \cdot \frac{-4}{9} =$

(19) $-5 \div 1\frac{1}{2} =$

Did you remember to put ( )'s around the mixed number?

Try these problems in your calculator, <u>and answer with a decimal rounded to two places</u>.

(20) $\dfrac{-2.34 \cdot 1.29^2}{5.43 - 2.17} + 6.39 =$

(21) $\pi \sqrt{10} =$

(22) $\sqrt{8.23^2 + 7.22^2} =$