Calculator Worksheet--page 1

Name_____

On this worksheet, I will be referencing keys that are on the TI30Xa. If you're using a different calculator, similar keys should be there; you just need to find them!

Positive/Negative Key

The positive/negative key is on the bottom row and looks something like this: + ⇄ −.
On some calculators, you just see the negative symbol: (−).

On my calculator, to key in a negative number, you press the number and then the pos/neg key. On other calculators, you press the (−) and then the number. Therefore, on the TI30Xa, −20 would be 20, + ⇄ −.

1. Key this number in: −14

Using pos/neg key

To use the pos/neg key in a problem, you have to be careful to distinguish between add and subtract symbols and the negative sign. For example, look at the keystrokes to use the calculator to figure out this expression:

−91 − (−76)

Keystrokes on TI30Xa:
91
+ ⇄ −
subtract symbol
76
+ ⇄ −
= sign

Result: −15

In my opinion, there are many places to make an error when you enter all those keys. It would probably be easier to do this:

−91 − (−76)
−91 + 76

Then the keystrokes would be:
91
+ ⇄ −
add symbol
76
= sign

Result: −15

An even quicker way would be the following:

−91 − (−76)
−91 + 76

Think: keep "bigger" sign and subtract. Then use the calculator to key in 91, subtract symbol, 76, = sign; you already know you will keep the negative.

Result: −15

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You want to use the calculator to its fullest capacity, but you also want to have as few keystrokes as necessary so you avoid errors in keying in the problem.

Now you try the following.

2. $-72 - (-35)$ **3.** $84 - (-26)$

As a final example, look at the following to see how I would use the calculator to do this problem: $-8(3)(2)(-5)(6)(-4)$.

I would think "Multiply with 3 negatives so the answer is negative"; then I would use the calculator this way: 8 times 3 times 2 times 5 times 6 times 4, equal sign. Then the answer would be -5760.

Using the Exponent Key

On the TI30Xa, the exponent key looks like this: y^x.
On some calculators, the exponent key looks like this: ^ or like this: x^y.

To use the exponent key, you key in the base number, the exponent key, the exponent, and then the equal sign.

5^4	Keystrokes on TI30Xa:	Keystrokes for calculators using ^
	5	5
	y^x	^
	4	4
	=	=

Result: 625

If your base number is a negative, I recommend you figure out the sign on your own. However, you can use the calculator, but you'll want to use ( ) around the base.

$(-4)^3$ I would think: 3 negatives multiplied = a negative; then key in 4^3
-64

You could key in the following:

(
4
+ ⇄ -
)
y^x
3
=

Result: -64

You get the same result, but it's easier to make an error when you have many keystrokes instead of a few.

4. 8^5 **5.** $(-12)^3$

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Using the Fraction Key a b/c

Again, this part will be referencing the TI30Xa. Other calculators should be similar; you just have to "play" until you know the keystrokes. The TI30Xa calculator does have a limitation, however. The largest denominator that can be keyed in is 999.

Keying in Fractions. My fraction key is to the left of 1. Here is what the fraction key looks like: $a\,{}^{b}\!/_{c}$.

To use this key, you press in the numerator, the $a\,{}^{b}\!/_{c}$ key, the denominator. Then look at the display to see how the calculator shows the fraction.

Key in $\frac{7}{8}$. Press 7, a b/c, 8. Look at the display.

Key in $\frac{5}{12}$. Press 5, a b/c, 12. Look at the display.

6. **Key in** $\frac{9}{10}$

7. **Key in** $\frac{11}{95}$

To key in a mixed number, you press the whole number, a b/c, the numerator, a b/c, the denominator. Then look at the display to see how the calculator shows the mixed number.

To key in $1\frac{2}{3}$, you would press 1, a b/c, 2, a b/c, 3. Now look at the display so you know what a mixed number looks like on the calculator.

8. **Key in** $2\frac{5}{7}$

9. **Key in** $-3\frac{7}{8}$

Reducing Fractions to Lowest Terms. Let's say you want to reduce the fraction $\frac{18}{24}$ to lowest terms. You know you could mentally divide both 18 and 24 by 6 to get $\frac{3}{4}$: $\frac{18}{24} = \frac{18 \div 6}{24 \div 6} = \frac{3}{4}$. You can also key in 18, a b/c, 24. If you then press the = symbol, $\frac{18}{24}$ will be shown as $\frac{3}{4}$.

Reduce these:

10. $\frac{21}{27}$

11. $\frac{72}{96}$

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Changing Mixed Numbers to Improper Fractions and vice-versa. To change mixed numbers to improper fractions, you need to use the d/c button (which is located above the a b/c button, in a different color). On my calculator, the d/c button is in yellow. So I have to press the 2nd (yellow) key and then the a b/c key to use the d/c key. If your d/c key is in blue but still above the a b/c key, then you have to press the blue key and the a b/c key to use the d/c key.

Key in $2\frac{3}{4}$ by pressing 2, a b/c, 3, a b/c, 4. Look at the display. Press the yellow 2nd button and the a b/c button (to use the d/c button). You'll see displayed the improper fraction $\frac{11}{4}$.

Change to improper:

12. $12\frac{3}{7}$ **13.** $8\frac{2}{11}$

To change from an improper to a mixed, you key in the improper fraction (numerator, a b/c, denominator) and press the equal sign to see the mixed number. For example, key in $\frac{43}{8}$ (43, a b/c, 8). Then press the = symbol to see the mixed number $5\frac{3}{8}$.

Change to mixed.

14. $\frac{93}{13}$ **15.** $\frac{177}{8}$

Adding and Subtracting Fractions. If you want to add $\frac{7}{16}+\frac{11}{12}$, you find the lowest common denominator: $\frac{7}{16}+\frac{11}{12}=\frac{7\cdot 3}{16\cdot 3}+\frac{11\cdot 4}{12\cdot 4}=\frac{21}{48}+\frac{44}{48}=\frac{65}{48} or 1\frac{17}{48}$.

You can also key in the problem and let the calculator do the work. On the TI30Xa, if the answer is a mixed number, that's what the calculator will display. Then you can use the d/c key (pressing the yellow 2nd button and a b/c) to show the answer as an improper fraction. Let's do the above problem on the calculator.

Key in 7, a b/c, 16, add symbol, 11, a b/c, 12, = symbol, and see the display $1\frac{17}{48}$. Press 2nd yellow key and a b/c (to use d/c key) to see the display $\frac{65}{48}$.

Try $8\frac{1}{2} - 10\frac{5}{7}$. Key in 8, a b/c, 1, a b/c, 2, subtract symbol, 10, a b/c, 5, a b/c, 7, = . See the display $-2\frac{3}{14}$. Change to improper (press yellow 2nd button and a b/c to use the d/c button). See the display $-\frac{31}{14}$.

If you want to work this problem: $-4\frac{1}{3} + 2\frac{7}{8}$, you would key in like this: 4, a b/c, 1, a b/c, 3, + ⇄ -, add symbol, 2, a b/c, 7, a b/c, 8, = . You would see the display $-1\frac{11}{24}$. Press yellow 2nd key and a b/c (to use the d/c key) and see the improper fraction $-\frac{35}{24}$.

16. $\frac{13}{18} + \frac{14}{15}$

17. $\frac{7}{8} - \frac{5}{12}$

18. $-3\frac{5}{6} - 2\frac{3}{4}$

19. $-5\frac{1}{10} + 3\frac{11}{15}$

20. $-15\frac{4}{5} - \left(-8\frac{29}{30}\right)$

21. $12\frac{1}{4} - \left(-8\frac{2}{3}\right)$

Multiplying and Dividing Fractions. These are approached the same way. You key in the fraction, key in the operation (multiply symbol or divide symbol), key in the next fraction, press the equal sign, and look at the display. If the answer displayed is a mixed number, press the 2nd key and a b/c key to use the d/c key to change the mixed number to an improper fraction.

Try $\frac{12}{25} \cdot \frac{15}{24}$. Key in 12, a b/c, 25, times symbol, 15, a b/c, 24, = , and see the display $\frac{3}{10}$.

Try $\frac{14}{27} \div \frac{21}{36}$. Key in 14, a b/c, 27, divide symbol, 21, a b/c, 36, = , and see the display $\frac{8}{9}$.

Without a calculator, you would have had to remember that to divide you invert and multiply (divide means multiply by the reciprocal of the divisor).

22. $\frac{35}{72} \cdot \frac{81}{49}$

23. $\frac{18}{55} \div -\frac{27}{44}$

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Answer Key. On this answer key, I'll show the keystrokes and then the answer.

1. 14, + ⇄ -
   -14

2. 72, + ⇄ -, subtract, 35, + ⇄ -, =
   -37

3. 84, subtract, 26, + ⇄ -, =
   110

4. 8, y^x, 5, =
   32768

5. (, 12, + ⇄ -,), y^x, 3, =
   -1728

6. 9, a b/c, 10
   $\frac{9}{10}$

7. 11, a b/c, 95
   $\frac{11}{95}$

8. 2, a b/c, 5, a b/c, 7
   $2\frac{5}{7}$

9. 3, a b/c, 7, a b/c, 8, + ⇄ -
   $-3\frac{7}{8}$

10. 21, a b/c, 27, =
    $\frac{7}{9}$

11. 72, a b/c, 96, =
    $\frac{3}{4}$

12. 12, a b/c, 3, a b/c, 7, 2nd, a b/c
    $\frac{87}{7}$

13. 8, a b/c, 2, a b/c, 11, 2nd, a b/c
    $\frac{90}{11}$

14. 93, a b/c, 13, =
    $7\frac{2}{13}$

15. 177, a b/c, 8, =
    $22\frac{1}{8}$

16. 13, a b/c, 18, add, 14, a b/c, 15, =
    $1\frac{59}{90}$, or 2nd, a b/c $\frac{149}{90}$

17. 7, a b/c, 8, subtract, 5, a b/c, 12, =
    $\frac{11}{24}$

18. 3, a b/c, 5, a b/c, + ⇄ -, subtract, 2, a b/c, 3, a b/c, 4, =
    $-6\frac{7}{12}$, or 2nd, a b/c $-\frac{79}{12}$

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19. 5, a b/c, 1, a b/c, 10, + ⇄ −, add, 3, a b/c, 11, a b/c, 15, =

$-1\frac{11}{30}$, or 2nd, a b/c, $-\frac{41}{30}$

20. 15, a b/c, 4, a b/c, 5, + ⇄ −, subtract, 8, a b/c, 29, a b/c, 30, + ⇄ −, =

$-6\frac{5}{6}$, or 2nd, a b/c $-\frac{41}{6}$

21. 12, a b/c, 1, a b/c, 4, subtract, 8, a b/c, 2, a b/c, 3, + ⇄ −, =

$20\frac{11}{12}$, or 2nd, a b/c $\frac{251}{12}$

22. 35, a b/c, 72, times, 81, a b/c, 49

$\frac{45}{56}$

23. 18, a b/c, 55, divided by, 27, a b/c, 44, + ⇄ −, =

$-\frac{8}{15}$