

“How to use the Scientific Calculator” A Primer

Since you are permitted to use this scientific calculator on the O.G.T., make sure you know HOW to use it to your best advantage. This primer will show you how to use the main keys and how to do the types of calculations that are necessary for being successful on the O.G.T.

It is strongly suggested that you do the calculations right along with this primer so that you are sure that you are using the calculator properly. You can gain several points on the O.G.T. by being very good at using this calculator.

NOTE: When you see square brackets, [], about an expression in this book, that means this is a key to press on the calculator.

For example, [x^2] means to press the squaring key.

[INV] [%] means to press the green INV key and then the [%] key. Notice that the % symbol is in green above the [=] key.

Three main keys: [AC], [C/CE], [→]

[AC] is the “All Clear” key. It clears out the number being typed in and resets the calculator so that all the settings are the original settings. It is strongly suggested that you press the [AC] key when you wish to start a calculation over or when you are unsure in what mode the calculator is.

NOTE: Press the [AC] key to restart the calculator. Sometimes you may want to press the [AC] key when you start a new calculation.

[C/CE] is the “Clear / Clear Entry” key.

Press [C/CE] one time and this will clear the current number being entered into the calculator.

Press [C/CE] a second time and this clears the number being entered and the entire calculation being done.

[→] is the backspace key that you can use when you are entering a number and just made a mistake on the last digit or two.

NOTE: A calculator can make mistakes if you type into it incorrectly. **Don’t automatically assume your calculator has the right answer.** And it is a GREAT IDEA to always perform the keystrokes twice to double check yourself.



Example. Press [AC]. Then type in this number: 7891234
Then press the [→]. Notice that it backspaces and deletes the last digit, the '4', that you typed. If you press [→] again, it backspaces and deletes the '3.' This is a handy key to use when you are typing very large numbers.

Basic Calculations: add, subtract, multiply, divide

Example: $26.3 + 7.89 = ?$
Keystrokes: 26.3 [+] 7.89 [=] Result: 34.19

Example: $1000 - 89.2 = ?$
Keystrokes: 1000 [-] 89.2 [=] Result: 910.8

Example: $0.4 \times 0.02 = ?$
Keystrokes: 0.4 [x] 0.02 [=] Result: 0.008

Example: $25 \div 6 = ?$
Keystrokes: 25 [÷] 6 [=] Result: 4.166666667

***Notice that there are 10 digits being displayed in the answer. The actual answer is 4.1666... or $4.1\bar{6}$, which means that the '6' repeats an infinite number of times. The calculator does round the 10th digit to a '7' (as it should).

This calculator will display up to 10 digits of accuracy. You should be aware of that.

Calculating with negative numbers

Find the [+/-] key. It is located in the middle of the bottom row of keys on the calculator. Pressing this key takes the opposite of the number that is in the display of the calculator.

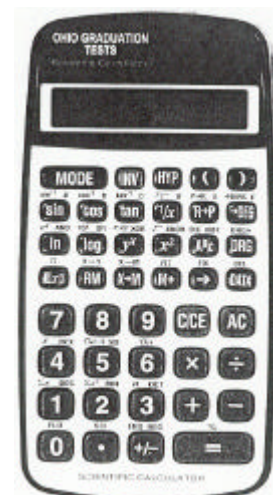
For example, to multiply -16 by -4 , or $-16 \cdot -4$, the keystrokes are as follows: 16 [+/-] [x] [4] [+/-] [=] Result is 64

Example: $328 \cdot -17 = ?$ Result is -5576

Example: $64 \div (-7) = ?$
Keystrokes: 64 [÷] 7 [+/-] [=] Result: -9.142857143

Please notice that in order to type in a negative number, you type the number first, THEN the negative sign [+/-] second.

Example: $-191 \div 6 = ?$ Result: -31.83333333



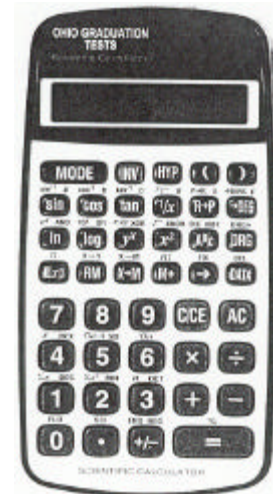
The P Key

The P key is a “green” key so you have to press the green [INV] key first in order to use the P key. The P key is located in the fourth row, first column, above the [Exp] key.

Keystrokes: [INV] [P]

Result: 3.141592654

Notice again that there are 10 digits being displayed here.



The Squaring Key [x^2] and the [$\sqrt{\quad}$] Key

To square a number, that is, raise a number to the second power, or multiply a number by itself, type in the number, then press the [x^2] key.

Example. $8^2 = ?$

Keystrokes: 8 [x^2] (Do NOT press the [=] key here)

Result: 64

Example. $4.71^2 = ?$

Keystrokes: 4.71 [x^2]

Result: 22.1841

Example: $54.7^2 = ?$

Result: 2992.09

The Square Root Key, $\sqrt{\quad}$, is also a “green” key so you must press the green [INV] key first to use the $\sqrt{\quad}$ key. The $\sqrt{\quad}$ key is located above the [x^2] key.

Example. $\sqrt{144} = ?$

Keystrokes: 144 [INV] [$\sqrt{\quad}$]

Result: 12

Example. $\sqrt{10} = ?$

Keystrokes: 10 [INV] [$\sqrt{\quad}$]

Result: 3.16227766

Example. $\sqrt{351} = ?$

Result: 18.734994

The [FIX] Key

This is also a “green” key so you have to press the green [INV] key to use the [FIX] key. The [FIX] key is located in the fourth row and it is above the [→] key. The purpose of the [FIX] key is to “fix” the number of digits displayed on the calculator’s screen to the right of the decimal point.

Example: If you want the result of your calculations to be rounded to the nearest hundredth automatically by the calculator, use the [FIX] key as follows:

Keystrokes: [INV] [FIX] [2] Result: All numbers displayed on the screen will be rounded to 2 places to the right of the decimal point (to the nearest hundredth).

Press the [INV] [\boldsymbol{p}] keys and the number in the display should be 3.14, which is \boldsymbol{p} rounded to the nearest hundredth, that is, rounded (FIXED) to 2 places to the right of the decimal point.

Example. Display the results of your calculations rounded to 4 digits to the right of the decimal point: $\boldsymbol{p} + 1 = ?$

Keystrokes: [INV] [FIX] [4] [INV] [\boldsymbol{p}] Result: 3.1416

Example. Find the square root of 20, $\sqrt{20}$, and display that answer rounded to the nearest thousandth.

Keystrokes: [INV] [FIX] [3] 20 [INV] [$\sqrt{\quad}$] Result: 4.472

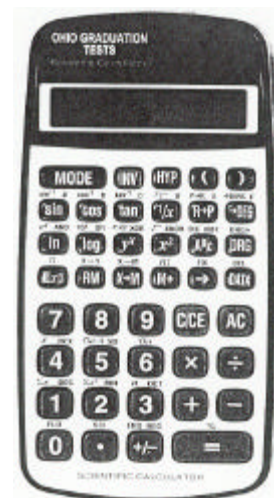
Example. Round the results of your calculation with 5 digits to the right of the decimal point: $\sqrt{30} + \boldsymbol{p}$ Result: 8.61882

NOTE: Press the [AC] button to “un-FIX” the calculator.

Raising to a Power Key [y^x] and The Cube Root Key [$\sqrt[3]{\quad}$]

Example. $4^3 = ?$

Keystrokes: 4 [y^x] 3 [=] Result: 64



Example. $2.7^4 = ?$

Keystrokes: 2.7 [y^x] 4 [=] Result: 53.1441

Example. $5.71^5 = ?$ Result: 6069.886093

Example. $\sqrt[3]{125} = ?$

Keystrokes: 125 [INV] [$\sqrt[3]{}$] Result: 5

Recall that the cube root, $\sqrt[3]{125}$, asks the question, "what number raised to the third power is 125?" $\sqrt[3]{125} = \underline{5}$ because $5^3 = 5 \cdot 5 \cdot 5 = 125$

Example. $\sqrt[3]{25} = ?$

Keystrokes: 25 [INV] [$\sqrt[3]{}$] Result: 2.924017738

Example. a) $\sqrt{200}$ b) $\sqrt[3]{200}$ Results: a) 14.14213562 b) 5.848035476

The Factorial Key [n!]

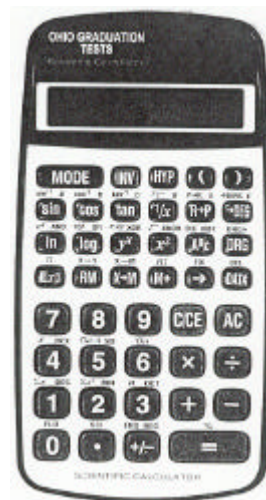
4!, which is read, "4 factorial", means $4 \cdot 3 \cdot 2 \cdot 1$, or $4! = 24$. Let's do this on the calculator to verify that we know how to use the factorial key.

Example. $4! = ?$

Keystrokes: 4 [INV] [n!] Result: 24

Example. $7! = ?$

Keystrokes: 7 [INV] [n!] Result: 5040



The Parentheses Keys [() and []]

Example. Simplify: $4.7(6.1-8)$

NOTE: Before we do the keystrokes, you must realize that: **() do not mean multiplication to this scientific calculator.** You must press the times key, [X], as shown below.

Keystrokes: 4.7 [X] [(] 6.1 [-] 8 [)] [=] Result: - 8.93

There are a few other things to notice when you use () keys. When you press the left parenthesis key, [(], two things occurred:

- 1) 0 appeared in the display
- 2) () appeared in the lower right corner of the display

The () appear in that corner until the right parenthesis, [)], is pressed.

*****When using (), make sure that you press the [=] key to get the final answer. It is very easy to forget to do that here. Be careful!**

Example. Simplify: $\frac{4.85+2.97}{6.85 \times 12}$

Keystrokes: [(] 4.85 [+] 2.97 [)] [÷] [(] 6.85 [X] 12 [)] [=]
Result: 0.095133819

*****Be careful – a common wrong answer is 82.2, which is the result before the [=] key is pressed. The [)] key is NEVER the last key pressed!**

Example. Simplify: $\frac{6.7-10.93}{48.4 \times 1.7}$ Result: -0.05140982

Example. $\frac{12!}{4!8!} = ?$

Keystrokes: 12 [INV] [n!] [÷] [(] 4 [INV] [n!] [X] 8 [INV] [n!] [)] [=]
Result: 495

Example. $\frac{11!}{5!6!} = ?$ Result: 462

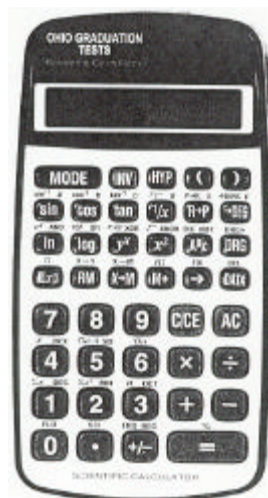
NOTE: Many students have the false assumption that the answer on the calculator cannot be wrong.

WELL THE CALCULATOR CAN BE WRONG!

Sometimes we mis-type a number or hit the wrong key or just type in the wrong order. You should always double check your keystrokes. And you should always make sure that your answer looks reasonable.

**The MEMORY Keys: [$x \rightarrow M$], x store into Memory;
[RM], Recall from Memory**

The [$x \rightarrow M$] key places the current value that is displayed on the calculator into a memory location called M. That number is stored there until either the number is overwritten by storing a different number into M, or until the [AC] – the All Clear button – is pressed. This key is usually used to store intermediate results, that is, numbers that will be used in a later calculation.



Example. Evaluate: $\frac{2.9\sqrt{5}}{p+1}$ by using the [$x \rightarrow M$] key and not the () keys.

Round the answer to the nearest thousandth.

Plan: First: evaluate the denominator.

Second: store that value into the calculator's memory (M).

Third: Evaluate the numerator.

Fourth: Divide the answer from part three (the numerator) by the value stored in Memory (M), which is the denominator.

Keystrokes: [INV] [p] [+] 1 [=] [$x \rightarrow M$] Notice that an 'M' appears in the upper left corner of the display of the calculator.

2.9 [\times] 5 [INV] [$\sqrt{\quad}$] [=] [\div] [RM] [=]

Result: 1.565725477 which rounds to 1.566 to the nearest thousandth.

Example. Evaluate to the nearest hundredth: $\frac{3p - 2.7^2}{\sqrt{5} + 6}$

Plan: the same plan as we used in the previous example.

Keystrokes: 5 [INV] [$\sqrt{\quad}$] [+] 6 [=] [$x \rightarrow M$] 3 [\times] [INV] [p] [-] 2.7 [x^2] [=] [\div] [RM] [=]

Result: 0.259198681 which rounds to 0.26, to the nearest hundredth.

Example. Evaluate to the nearest hundredth: $\frac{p + 7}{6.4^2 - \sqrt[3]{30}}$

Result: 0.267922092, which is 0.268 to the nearest thousandth.

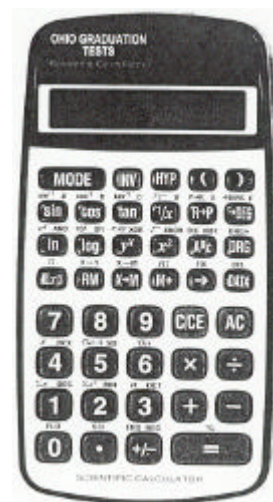
NOTE: For extra practice, do the last three examples but use () instead of the memory keys. 1) See if you come up with this same answers, and 2) decide which way is easier for you.

2nd NOTE: We will not use the [M +] key in this document. It can be confusing to students and we really don't need it. We can get along just fine without it.

Fractions on the Calculator!

The [$A\frac{B}{C}$] key and the green one above it, [D/C], are very powerful and popular keys on this scientific calculator – especially if you would rather not have to do many calculations by hand dealing with fractions.

We will investigate how to enter fractions, simplify fractions (rewrite in lowest terms), enter mixed numbers, rewrite mixed numbers as fractions (sometimes called improper fractions), add, subtract, multiply and divide fractions and mixed numbers.



Example. Simplify: $\frac{64}{120}$

Keystrokes: 64 [$A\frac{B}{C}$] 120 [=]

Result: 8_15 which means $\frac{8}{15}$

Example. Simplify: $\frac{80}{96}$

Keystrokes: 80 [$A\frac{B}{C}$] 96 [=]

Result: 5_6 which means $\frac{5}{6}$

Example. Simplify: $3\frac{24}{60}$

Keystrokes: 3 [$A\frac{B}{C}$] 24 [$A\frac{B}{C}$] 60 [=]

Result: 3_2_5 which means $3\frac{2}{5}$

Example. Rewrite as a fraction: $3\frac{4}{7}$

Keystrokes: 3 [$A\frac{B}{C}$] 4 [$A\frac{B}{C}$] 7 [INV] [$A\frac{B}{C}$]

Result: 25_7 which means $\frac{25}{7}$

Example. Rewrite as a fraction: $12\frac{5}{8}$

Keystrokes: 12 [A $\frac{B}{C}$] 5 [A $\frac{B}{C}$] 8 [INV] [A $\frac{B}{C}$]

Result: 101 $\frac{5}{8}$ which means $\frac{101}{8}$

Example. Simplify: $\frac{2}{3} + \frac{3}{4}$

Keystrokes: 2 [A $\frac{B}{C}$] 3 [+] 3 [A $\frac{B}{C}$] 4 [=] Result: $1\frac{5}{12}$

Example. Simplify: $\frac{3}{8} + \frac{5}{6}$ Result: $1\frac{5}{24}$

Example. Simplify: $5\frac{3}{8} - 1\frac{7}{12}$

Keystrokes: 5 [A $\frac{B}{C}$] 3 [A $\frac{B}{C}$] 8 [-] 1 [A $\frac{B}{C}$] 7 [A $\frac{B}{C}$] 12 [=]

Result: $3\frac{19}{24}$

Example. Simplify: $12\frac{1}{9} - 4\frac{5}{6}$ Result: $7\frac{5}{18}$

Example. Simplify: $\frac{3}{4} \cdot 600$

Keystrokes: 3 [A $\frac{B}{C}$] 4 [x] 600 [=] Result: 450

Example. Simplify: $1\frac{2}{3} \times 3\frac{4}{5}$ Result: $6\frac{1}{3}$

Example. Simplify: $2\frac{1}{3} \div 1\frac{5}{6}$

Keystrokes: 2 [A $\frac{B}{C}$] 1 [A $\frac{B}{C}$] 3 [÷] 1 [A $\frac{B}{C}$] 5 [A $\frac{B}{C}$] 6 [=]

Result: $1\frac{3}{11}$

Example. Simplify: $4\frac{1}{2} \div \frac{3}{7}$ Result: $10\frac{1}{2}$

The Percent Key [%] The % key is located in green above the [=] sign key.

The only thing this key will do is rewrite a % as a decimal. For example, if you type in 6 and then type the % key, the result is 0.06 (recall that % means “out of 100” or “x 0.01”). This is all this key will do.

Example. Rewrite 25% as a decimal.

Keystrokes: 25 [INV] [%]

Result: 0.25 because 25% is 25 out of 100 or $\frac{25}{100}$ which is 0.25.

Example. Rewrite 3% as a decimal.

Keystrokes: 3 [INV] [%]

Result: 0.03 because 3% is 3 out of 100 or $\frac{3}{100}$ which is 0.03.

Example. Rewrite $\frac{1}{2}$ % as a decimal.

Keystrokes: 1 [$A^{B/C}$] 2 [INV] [%]

Result: 0.005 because $\frac{1}{2}$ % is the same as 0.5% which is 0.005.

Example. Rewrite 12.5% as a decimal. Result: 0.125

TRIGONOMETRIC FUNCTION KEYS: sin, cos, tan

When using the trigonometry function keys, we must be in Degree mode. That is what mode the calculator is in when we press the [AC] key. So if the word ‘DEG’ does not appear in the display, press the [AC] key until it appears.

We will review how to use trigonometry to solve problems in the chapter that reviews the Measurement Standard. In this section we are only going to investigate how to use this scientific calculator to do trigonometry.



Examples. You will be given the measure of the angle and asked to compute one of the trigonometric functions for that angle.

For each of the following, calculate and round your final answer to 4 places to the right of the decimal point.

a) $\sin 35^\circ$

Keystrokes: 35 [sin] Result: 0.573576436, which rounds to 0.5736.

b) $\cos 81^\circ$

Keystrokes: 81 [cos] Result: 0.156434465, which rounds to 0.1564.

c) $\tan 51^\circ$

Keystrokes: 51 [tan] Result: 1.234897157, which rounds to 1.2349.

Now we will reverse the procedure. That is, you will be supplied with the trigonometric value and ask to find the measure of the angle to the nearest tenth of a degree. To do these types of calculations, we need to use the inverse trigonometric function keys, which are located in green above the regular trigonometry function keys.

Recall that \sin^{-1} is read “the inverse sine of”, \cos^{-1} is read “the inverse cosine of”, and \tan^{-1} is read “the inverse tangent of.” These inverse keys find the value of the missing angles.

Examples.

For each of the following, find the value of the missing angles to the nearest tenth of a degree.

a) $\sin A = 0.4389$

Keystrokes: 0.4389 [INV] [\sin^{-1}]

Result: 26.03371786, which means that the measure of angle A is approximately 26.0° , rounded to the nearest tenth of a degree.

b) $\cos Q = \frac{2}{3}$

Keystrokes: 2 [\div] 3 [=] [INV] [\cos^{-1}]

Result: the measure of angle Q is approximately 48.2° , to the nearest tenth of a degree.

NOTE: you could have also used the fraction key to enter the $\frac{2}{3}$. See below:

Keystrokes: 2 [$A\frac{B}{C}$] 3 [INV] [\cos^{-1}] See the result (above).

$$c) \tan E = \frac{\sqrt{5}}{2}$$

Keystrokes: 5 [INV] [$\sqrt{\quad}$] [\div] 2 [=] [INV] [\tan^{-1}]

Result: the measure of angle E is 48.2° , rounded to the nearest tenth of a degree.

Examples. Compute to 4 decimal places: a) $\sin 53^\circ$ b) $\cos 21^\circ$

Results: a) 0.7986 b) 0.9336

The [\rightarrow DEG] and [\rightarrow DMS] Keys

The [\rightarrow DMS] key converts an angle that is measured in decimal degrees, like 48.5° , into an angle that is measured in Degrees, Minutes, and Seconds, which is $48^\circ 30'$ (48 degrees and 30 minutes). Most of the time on the O.G.T. you will be asked to write your angle measurements to the nearest degree or tenth of a degree, but just in case, let's look at how to convert to Degrees, Minutes, and Seconds.



Example. Rewrite 54.26° in Degrees, Minutes, Seconds.

Keystrokes: 54.26 [INV] [\rightarrow DMS]

Result: $54^\circ 15' 36''$

Example. Rewrite 24.358° in Degrees, Minutes, Seconds

Keystrokes: 24.358 [INV] [\rightarrow DMS]

Result: Calculator displays: $24^\circ 21' 28''8$, which actually means $24^\circ 21' 28.8''$

Example. Rewrite $37^\circ 34'$ in decimal degrees rounded to the nearest hundredth of a degree.

Keystrokes: 37.34 [\rightarrow DEG]

Result: 37.56666667° or 37.57°

Example. Rewrite $100^\circ 19'$ in decimal degrees rounded to the nearest hundredth of a degree.

Keystrokes: 100.19 [\rightarrow DEG]

Result: 100.31666667° or 100.32°

Examples. a) Rewrite 39.17° in degrees, minutes, seconds. Result: $39^\circ 10' 12''$

b) Rewrite $39^\circ 17'$ in decimal degrees to the nearest hundredth. Result: 39.28°

Practice Exercises for the O.G.T. Scientific Calculator

Directions: Perform the following calculations with the O.G.T. scientific calculator. Round all answers to four decimal places unless otherwise specified.

1. $36.8 + p$

2. $-87.9 \div 3.81$

3. $\sqrt{200}$

4. $7.31^2 + \sqrt{19}$

5. 27^3

6. $(3.7106)^5$

7. $\sqrt[3]{100}$

8. $9!$

9 – 10. a) Use parentheses to compute

b) Use the Memory Keys to compute

c) Compare to see that you obtain the same answer in parts a and b

9. $27.95(16.14 - 39.8)$

10. $\frac{23.1 - 52.7}{p + 6.1}$

11. $\frac{10!}{3!7!}$

12. Simplify: $\frac{64}{112}$

13 – 14.

a) Write your answer as a mixed number in simplest form

b) Write your answer as a fraction in simplest form

13. Simplify: $\frac{228}{84}$

14. Simplify: $3\frac{30}{4}$

15 – 22. Write in simplest form.

15. $\frac{3}{5} + \frac{4}{7}$

16. $\frac{3}{4} - \frac{7}{10}$

17. $\frac{3}{8} \cdot 1640$

18. $\frac{2}{3} \div \frac{4}{7}$

19. $8\frac{2}{3} + 6\frac{4}{9}$

20. $3\frac{2}{7} - 1\frac{5}{8}$

21. $8\frac{3}{4} \cdot 5\frac{1}{6}$

22. $4\frac{2}{3} \div 3\frac{5}{8}$

23. Rewrite as a decimal: a) 40% b) 6% c) $\frac{3}{4}\%$

24. Evaluate to 4 decimal places to the right of the decimal point.

a) $\sin 84^\circ$ b) $\cos 37.6^\circ$ c) $\tan 71^\circ$

25 – 28. Find the measure of the angle: a) rounded to the nearest tenth of a degree
b) in degrees, minutes and seconds

25. $\sin A = 0.3$ 26. $\cos B = \frac{2}{7}$ 27. $\tan C = \frac{5}{6}$ 28. $\sin D = \frac{\sqrt{3}}{2}$

29 – 30. Rewrite in decimal degrees rounded to the nearest hundredth of a degree:

29. $85^\circ 17'$ 30. $140^\circ 52'$

31 – 32. Use the [FIX] key to compute the following.

31. Set the calculator to FIX 6 and evaluate: $\sqrt{71} - 3$

32. Set the calculator to FIX 5 and evaluate: $\sqrt[3]{38} + 6$

33 – 36. Simplify.

33. $-117 - 496$

34. $-3.76 \times 8.4 + (-4.9)$

35. $41.2 \div (-7) - (-9.1)$

36. $-4.6 + 3.4 \times (-7.8) + (-5.2)$

Answers for the Practice Exercises for the O.G.T. Scientific Calculator

- | | | | |
|--|-----------------------|------------------------|-------------------------------------|
| 1. 39.9416 | 2. -23.0709 | 3. 14.1421 | 4. 57.7950 |
| 5. 19,683 | 6. 703.4297 | 7. 4.6416 | 8. 362,880 |
| 9. a) -661.297 | b) -661.297 | 10. a) -3.2029 | b) -3.2029 |
| 11. 120 | 12. $\frac{4}{7}$ | | |
| 13. a) $2\frac{5}{7}$ | 13. b) $\frac{19}{7}$ | 14. a) $10\frac{1}{2}$ | 14. b) $\frac{21}{2}$ |
| 15. $1\frac{6}{35}$ or $\frac{41}{35}$ | 16. $\frac{1}{20}$ | 17. 615 | 18. $1\frac{1}{6}$ or $\frac{7}{6}$ |
| 19. $15\frac{1}{9}$ | 20. $1\frac{37}{56}$ | 21. $45\frac{5}{24}$ | 22. $1\frac{25}{87}$ |
| 23. a) 0.4 | 23. b) 0.06 | 23. c) 0.0075 | 24. a) 0.9945 |
| 24. b) 0.7923 | 24. c) 2.9042 | 25. a) 17.5° | 25. b) 17° 27' 27.3" |
| 26. a) 73.4° | 26. b) 73° 23' 54.4" | 27. a) 39.8° | 27. b) 39° 48' 20" |
| 28. a) 60° | 28. b) 60° | 29. 85.28° | 30. 140.87° |
| 31. 5.426150 | 32. 9.36198 | 33. -613 | 34. -36.484 |
| 35. 3.2143 | 36. -36.32 | | |

Actual Calculator Keystrokes for the Practice Exercises for the O.G.T. Scientific Calculator

- 36.8 [+] [INV] [$\frac{1}{x}$] [=] Calculator displays: 39.94159265
- 87.9 [+/-] [\div] 3.81 [=] Calculator displays: - 23.07086614
- 200 [INV] [$\sqrt{\quad}$] Calculator displays: 14.14213562
- 7.31 [x^2] [+] 19 [INV] [$\sqrt{\quad}$] [=] Calculator displays: 57.79499894

5. $27 [y^x] 3 [=]$ Calculator displays: 19683.

6. $3.7106 [y^x] 5 [=]$ Calculator displays: 703.4297003

7. $100 [INV] [\sqrt[3]{ }]$ Calculator displays: 4.641588834

8. $9 [INV] [n!]$ Calculator displays: 362880.

9. a) $27.95 [x] [(] 16.14 [-] 39.8 [)] [=]$ Calculator displays: - 661.297

b) $16.14 [-] 39.8 [=] [x \rightarrow M] 27.95 [x] [RM] [=]$

Calculator displays: - 661.297

10. a) $[(] 23.1 [-] 52.7 [)] [\div] [(] [INV] [p] [+] 6.1 [)] [=]$
Calculator displays: - 3.202911133

b) $[INV] [p] [+] 6.1 [=] [x \rightarrow M] 23.1 [-] 52.7 [=] [\div] [RM] [=]$
Calculator displays: - 3.202911133

11. $10 [INV] [!] [\div] [(] 3 [INV] [!] [x] 7 [INV] [!] [)] [=]$
Calculator displays: 120

Please note: you MUST either use () around the calculations in the denominator or calculate the denominator and store the result using the Memory key.

12. $[AC] 64 [A^B/C] 112 [=]$ Calculator displays: $4 _7$, which means $\frac{4}{7}$

NOTE: Sometimes it is a good idea to first press the [AC] "All Clear" key before starting a new calculation. I will do that from time to time and I suggest you do it also – especially when it seems that the calculator needs reset.

13. a) $[AC] 228 [A^B/C] 84 [=]$ Calculator displays: $2 _5 _7$, which means $2 \frac{5}{7}$

b) $[INV] [D/C]$ Calculator displays: $19 _7$, which means $\frac{19}{7}$

14. a) $3 [A^B/C] 30 [A^B/C] 4 [=]$ Calculator displays: $10 _1 _2$, which means $10 \frac{1}{2}$

b) $[INV] [D/C]$ Calculator displays: $21 _2$, which means $\frac{21}{2}$

15. $[AC] 3 [A^B/C] 5 [+] 4 [A^B/C] 7 [=]$

Calculator displays: $1 _6 _35$, which means $1 \frac{6}{35}$

16. $3 [A^B/C] 4 [-] 7 [A^B/C] 10 [=]$

Calculator displays: $1 _20$, which means $\frac{1}{20}$

17. [AC] 3 [$A\%C$] 8 [x] 1640 [=] Calculator displays: 615

18. [AC] 2 [$A\%C$] 3 [\div] 4 [$A\%C$] 7 [=]

Calculator displays: 1_1_6, which means $1\frac{1}{6}$

19. 8 [$A\%C$] 2 [$A\%C$] 3 [+] 6 [$A\%C$] 4 [$A\%C$] 9 [=]

Calculator displays: 15_1_9, which means $15\frac{1}{9}$

20. 3 [$A\%C$] 2 [$A\%C$] 7 [-] 1 [$A\%C$] 5 [$A\%C$] 8 [=]

Calculator displays: 1_37_56, which means $1\frac{37}{56}$

21. [AC] 8 [$A\%C$] 3 [$A\%C$] 4 [x] 5 [$A\%C$] 1 [$A\%C$] 6 [=]

Calculator displays: 45_5_24, which means $45\frac{5}{24}$

22. [AC] 4 [$A\%C$] 2 [$A\%C$] 3 [\div] 3 [$A\%C$] 5 [$A\%C$] 8 [=]

Calculator displays: 1_25_87, which means $1\frac{25}{87}$

23. a) [AC] 40 [INV] [%] Calculator displays: 0.4

23. b) [AC] 6 [INV] [%] Calculator displays: 0.06

23. c) [AC] 3 [$A\%C$] 4 [INV] [%] Calculator displays: 0.0075

Another way to do this: [AC] 3 [\div] 4 [=] [INV] [%]

Calculator displays: 0.0075

NOTE: The fraction $\frac{3}{4}$ is equivalent to 0.75 as a decimal and 75% as a percent.

However $\frac{3}{4}\%$ is equivalent to 0.75% which is 0.0075. This can be confusing so think about it.

24. a) [AC] 84 [sin] Calculator displays: 0.994521895

b) [AC] 37.6 [cos] Calculator displays: 0.792289643

c) [AC] 71 [tan] Calculator displays: 2.904210878

25. a) [AC] 0.3 [INV] [\sin^{-1}] Calculator displays: 17.45760312

b) [INV] [$\rightarrow DMS$] Calculator displays: 17° 27' 27"3

26. a) [AC] 2 [A%] 7 [INV] [\cos^{-1}] Calculator displays: 73.3984504
 b) [INV] [\rightarrow DMS] Calculator displays: 73° 23' 54"4
27. a) [AC] 5 [A%] 6 [INV] [\tan^{-1}] Calculator displays: 39.80557109
 b) [INV] [\rightarrow DMS] Calculator displays: 39° 48' 20"
28. a) [AC] 3 [INV] [$\sqrt{\quad}$] [\div] 2 [=] [INV] [\tan^{-1}]
 Calculator displays: 20.44669732
 b) [INV] [\rightarrow DMS] Calculator displays: 20° 26' 48"1
29. [AC] 85.17 [\rightarrow DEG] Calculator displays: 85.28333333
30. [AC] 140.52 [\rightarrow DEG] Calculator displays: 140.8666667
31. [AC] [INV] [FIX] 6 71 [INV] [$\sqrt{\quad}$] [-] 3 [=]
 Calculator displays: 5.426150
32. [AC] [INV] [FIX] 5 38 [INV] [$\sqrt[3]{\quad}$] [+] 6 [=]
 Calculator displays: 9.36198
33. [AC] 117 [\pm] [-] 496 Calculator displays: -613
34. [AC] 3.76 [\pm] [X] 8.4 [+] 4.9 [\pm] [=]
 Calculator displays: -36.484
35. [AC] 41.2 [\div] 7 [\pm] [-] 9.1 [\pm] [=]
 Calculator displays: 3.214285714
36. [AC] 4.6 [\pm] [+] 3.4 [X] 7.8 [\pm] [+] 5.2 [\pm] [=]
 Calculator displays: -36.32