



SC-216 SCIENTIFIC CALCULATOR

(FULL MANUAL)



SUPPORT@REDSTARTEC.COM



WWW.REDSTARTEC.COM



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*This table of contents provides a comprehensive guide to our SC-216 scientific calculator manual, offering a better understanding of how to use the scientific calculator



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If you encounter any issues while using the product, please refer to our service process. Your support is our greatest strength, and your recognition and evaluation are a tremendous encouragement to Red Star Tec. Thank you!

PRODUCT OVERVIEW



- 1 2 LINE DISPLAY
- 2 MODE KEY
- 3 ON KEY
- 4 REPLAY FUNCTION
- 5 SHIFT KEY
- 6 ALPHA KEY
- 7 FUNCTION KEYS
- 8 DELETE KEY
- 9 ALL CLEAR /OFF
- 10 NUMBER KEYS
- 11 BASIC OPERATION KEYS
- 12 SCIENTIFIC NOTATION
- 13 LAST ANSWER KEY
- 14 EQUALS KEY



SLIDING PROTECTIVE COVER



BATTERY
COMPARTMENT

SPECIFICATIONS

Power Supply: 2 AAA batteries required

Battery Life: Approximately 17,000 hours continuous display of flashing cursor. Approximately 2 years when left with power turned off.

Dimensions: 16 x 8 x 0.1cm

Weight: 130 g (4.6 oz)

Power Consumption: 0.0025 W

Operating Temperature: 0°C to 40°C (32°F to 104 F)

TWO LINE DISPLAY



The two-line display allows you to view both the calculation formula and its result simultaneously.

- The upper line displays the calculation formula.
- The lower line shows the result.

The integer part of the computational solution can have a delimiter placed every three digits when there are more than three digits.

GETTING STARTED

Powering On: Press the ON button on the upper right corner

Turning OFF: Press SHIFT button then press AC button.

Power Saving Mode: Calculator power automatically turns off if you do not perform any operation for five minutes. When this happens, press (ON) to turn power back on.

Replacing the Battery : Dim figures on the display of the calculator indicate that battery power is low. Continued use of the calculator when the battery is low can result in improper operation. Replace the battery as soon as possible when display figures become dim. Ensure the battery's positive (+) and negative (-) ends are correctly aligned when inserting it into the calculator.

To remove the cover: Hold the cover and slide the calculator out.

To replace the cover: Hold the cover and slide the calculator in, keyboard end first. Always insert the keyboard end of the calculator into the cover first. Never insert the display end first.

GETTING STARTED

INITIAL SETUP (MODES)

To perform this type of calculation:	Perform this key operation	To enter this mode
(DEFAULT) Basic arithmetic calculations	MODE 1	COMP
Standard deviation	MODE 2	SD
Regression calculations	MODE 3	REG

Pressing the **I MODE!** key more than once displays additional setup screens. Setup screens are described in the sections of this manual where they are actually used to

Statistical	SD
Calculations	REG

To reset the calculation mode and setup to the initial defaults shown below, press **SHIFT I CLR 2 (Mode) §xg**.

- Calculation Mode: COMP
- Angle Unit: Deg
- Exponential Display Format: Norml
- Fraction Display Format: a b/c
- Decimal Point Character: Dot

Be sure to check the current calculation mode (SD, REG, COMP) and angle unit setting (Deg, Rad, Gra) before beginning a calculation.

Input Capacity

- The memory area used for calculation input can hold up to 79 "steps." Each step is taken up whenever you press a number key or an arithmetic operator key.
- Operations using the SHIFT or ALPHA keys do not take up a step, so inputting SHIFT R, for example, only takes up one step.
- Pressing the **ANS** key recalls the last result obtained, which you can use in a subsequent calculation. See "Answer Memory" for more information about using the ANS key.

Making Corrections During Input

- Use the [←] and [→] keys to move the cursor to the desired location.
- Press [DEL] to delete the number or function at the current cursor position.
- Press [SHIFT] [INS] to switch to an insert cursor [_]. Inputting something while the insert cursor is on the display will insert the input at that position.
- Pressing [SHIFT] [INS] again or [AC] returns the cursor to its normal mode.

Replay Function

The replay function saves the last 9 calculations, including the formula and result.

- Press the [REPLAY] key to view the most recent calculation. Press it again to step back through previous calculations, from newest to oldest.
- When viewing a calculation in replay memory, press the [REPLAY] or [EDIT] key to enter the editing screen.
- After finishing a calculation, pressing [REPLAY] or [EDIT] immediately will bring up the editing screen for that calculation.
- The [AC] key does not clear replay memory, so you can still recall the last calculation even after pressing [AC].
- Replay memory is cleared in the following situations:
 - When you press the [ON] key.
 - When you initialize modes and settings by pressing [SHIFT] + [CLR] + [REPLAY] (or [EXE]).
 - When you switch to a different calculation mode.

Error Locator

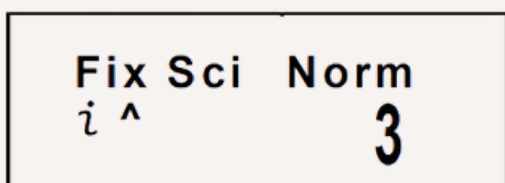
- After an error occurs, press [REPLAY] or [EDIT] to display the calculation with the cursor positioned at the error location.

Multi-statements

- A multi-statement combines two or more expressions, separated by a colon (:).
- Example: To add $2 + 3$ and then multiply the result by 4, use: $2 + 3 : Ans \times 4$.

Exponential Display Formats

- The calculator can display values up to 10 digits. Larger values are shown in exponential notation.
- To change the exponential display format, press the [MODE] key repeatedly until you reach the exponential display format setup screen.



FEATURES

BASIC CALCULATIONS

COMP

■ Arithmetic Calculations

Use the **MODE** key to enter the COMP Mode when you want to perform basic calculations.

COMP **MODE** **1**

- Negative values inside of calculations must be enclosed within parentheses. For details, see "Order of Operations."
- It is not necessary to enclose a negative exponent within parentheses.

• **Example 1:** $3 \times (5 \times 10^{-9}) = 1.5 \times 10^{-9}$ 3 **×** 5 **EXP** **(-)** 9 **=**

• **Example 2:** $5 \times (9 + 7) = 80$ 5 **×** **(** 9 **+** 7 **)** **=**

• You can skip all **(** operations before **=**

■ Fraction Calculations

- Values are displayed in decimal format automatically whenever the total number of digits of a fractional value (integer+numerator+ denominator +separator marks) exceeds 10.

• **Example 1:** $\frac{2}{3} + \frac{1}{5} = \frac{13}{15}$ 2 **a%** 3 **+** 1 **a%** 5 **=** 13┆15.

• **Example 2:** $3 \frac{1}{4} + 1 \frac{2}{3} = 4 \frac{11}{12}$
3 **a%** 1 **a%** 4 **+** 1 **a%** 2 **a%** 3 **=** 4┆11┆12.

• **Example 3:** $\frac{2}{4} = \frac{1}{2}$ 2 **a%** 4 **=** 1┆2.

• **Example 4:** $\frac{1}{2} + 1.6 = 2.1$ 1 **a%** 2 **+** 1.6 **=** 2.1

- Results of calculations that mix fraction and decimal values are always decimal.

Decimal ↔ Fraction Conversion

• **Example 1:** $2.75 = 2 \frac{3}{4}$ (Decimal → Fraction) 2.75 **=** 2.75
a% 2┆3┆4.
 $= \frac{11}{4}$ **SHIFT** **d/c** 11┆4.

• **Example 2:** $\frac{1}{2} \leftrightarrow 0.5$ (Fraction ↔ Decimal) 1 **a%** 2 **=** 1┆2.
a% 0.5
a% 1┆2.

Mixed Fraction ↔ Fraction Conversion

• **Example:** $1 \frac{2}{3} \leftrightarrow \frac{5}{3}$ 1 **a%** 2 **a%** 3 **=** 1┆2┆3.
SHIFT **d/c** 5┆3.
SHIFT **d/c** 1┆2┆3.

■ Degrees, Minutes, Seconds Calculations

- You can perform sexagesimal calculations using degrees (hours), minutes, and seconds, and convert between sexagesimal and decimal values.
- Example 1:** To convert the decimal value 2.258 to a sexagesimal value and then back to a decimal value

$$2.258 \text{ [=]} \boxed{2.258}$$

$$\text{[SHIFT] [DMS]} \boxed{2^{\circ}15^{\circ}28.8}$$

$$\text{[DMS]} \boxed{2.258}$$

- Example 2:** To perform the following calculation:

$$12^{\circ}34'56'' \times 3.45 \quad 12 \text{ [DMS]} 34 \text{ [DMS]} 56 \text{ [DMS]} \text{[X]} 3.45 \text{ [=]} \boxed{43^{\circ}24^{\circ}31.2}$$

■ FIX, SCI, RND

- To change the settings for the number of decimal places, the number of significant digits, or the exponential display format, press the **[MODE]** key a number of times until you reach the setup screen shown below.
- Press the number key (**1**) (**2**) (**3**) that corresponds to the setup item you want to change.

- 1** (Fix): Number of decimal places
- 2** (Sci): Number of significant digits
- 3** (Norm): Exponential display format

- Example 1:** $200 \div 7 \times 14 =$ $200 \text{ [DMS]} 7 \text{ [X]} 14 \text{ [=]} \boxed{400.}$
 (Specifies three decimal places.) $\text{[MODE]} \dots \text{[1]} \text{ (Fix)} \text{[3]} \boxed{400.000}$
 (Internal calculation continues using 12 digits.) $200 \text{ [DMS]} 7 \text{ [=]} \boxed{28.571}$
 $\text{[X]} 14 \text{ [=]} \boxed{400.000}$

The following performs the same calculation using the specified number of decimal places.

- (Internal rounding) $200 \text{ [DMS]} 7 \text{ [=]} \boxed{28.571}$
 $\text{[SHIFT] [RND]} \boxed{28.571}$
 $\text{[X]} 14 \text{ [=]} \boxed{399.994}$

- Press **[MODE] ... [3] (Norm) [1]** to clear the Fix specification.
- Example 2:** $1 \div 3$, displaying result with two significant digits (Sci 2)

$$\text{[MODE]} \dots \text{[2]} \text{ (Sci)} \text{[2]} 1 \text{ [DMS]} 3 \text{ [=]} \boxed{3.3^{-01}}$$

- Press **[MODE] ... [3] (Norm) [1]** to clear the Sci specification.

MEMORY CALCULATIONS

COMP

Use the **MODE** key to enter the COMP Mode when you want to perform basic calculations.

COMP **MODE** **1**

Independent Memory

- To clear independent memory (M), input **0** **SHIFT** **STO** **M** (M+).

Example:

$23 + 9 = 32$	23 + 9 SHIFT STO M (M+)
$53 - 6 = 47$	53 - 6 M+
$-) 45 \times 2 = 90$	45 x 2 SHIFT M-
<hr style="width: 100%; border: 0.5px solid black;"/> $(Total) -11$	RCL M (M+)

Variables

- There are nine variables (A through F, M, X and Y), which can be used to store data, constants, results, and other values.
- Use the following operation to delete data assigned to a particular variable: **0** **SHIFT** **STO** **A**. This operation deletes the data assigned to variable A.
- Perform the following key operation when you want to clear the values assigned to all of the variables. **SHIFT** **CLR** **1** (MCI) **=**

Example: $193.2 \div 23 = 8.4$ 193.2 **SHIFT** **STO** **A** **÷** 23 **=**
 $193.2 \div 28 = 6.9$ **ALPHA** **A** **÷** 28 **=**

SCIENTIFIC FUNCTION CALCULATIONS

COMP

Use the **MODE** key to enter the COMP Mode when you want to perform basic calculations.

COMP **MODE**

Trigonometric/Inverse Trigonometric Functions

- To change the default angle unit (degrees, radians, grads), press the **MODE** key a number of times until you reach the angle unit setup screen shown below.

- Press the number key (**1**, **2**, or **3**) that corresponds to the angle unit you want to use.

$(90^\circ = \frac{\pi}{2} \text{ radians} = 100 \text{ grads})$

Deg	Rad	Gra
1	2	3

- Example 1:** $\sin 63^\circ 52' 41'' = 0.897859012$

MODE **1** (Deg) **sin** 63 **...** 52 **...** 41 **...** **=**

- Example 2:** $\cos\left(\frac{\pi}{3} \text{ rad}\right) = 0.5$

MODE **2** (Rad) **cos** **(** **SHIFT** **π** **÷** 3 **)** **=**

- Example 3:** $\cos^{-1} \frac{\sqrt{2}}{2} = 0.25\pi \text{ (rad)} \left(= \frac{\pi}{4} \text{ (rad)} \right)$

MODE **2** (Rad) **SHIFT** **cos⁻¹** **(** **√** 2 **÷** 2 **)** **=** **ALPHA** **÷** **SHIFT** **π** **=**

- Example 4:** $\tan^{-1} 0.741 = 36.53844577^\circ$

MODE **1** (Deg) **SHIFT** **tan⁻¹** 0.741 **=**

■ Hyperbolic / Inverse Hyperbolic Functions

- **Example 1:** $\sinh 3.6 = 18.28545536$
- **Example 2:** $\sinh^{-1} 30 = 4.094622224$

$\boxed{\text{hyp}} \boxed{\sin} 3.6 \boxed{=}$
 $\boxed{\text{hyp}} \boxed{\text{SHIFT}} \boxed{\sin^{-1}} 30 \boxed{=}$

■ Common and Natural Logarithms/Antilogarithms

- **Example 1:** $\log 1.23 = 0.089905111$
- **Example 2:** $\ln 90 (= \log_e 90) = 4.49980967$
 $\ln e = 1$
- **Example 3:** $e^{10} = 22026.46579$
- **Example 4:** $10^{1.5} = 31.6227766$
- **Example 5:** $2^{-3} = 0.125$

$\boxed{\log} 1.23 \boxed{=}$
 $\boxed{\ln} 90 \boxed{=}$
 $\boxed{\ln} \boxed{\text{ALPHA}} \boxed{e} \boxed{=}$
 $\boxed{\text{SHIFT}} \boxed{e^x} 10 \boxed{=}$
 $\boxed{\text{SHIFT}} \boxed{10^x} 1.5 \boxed{=}$
 $2 \boxed{\wedge} \boxed{(-)} 3 \boxed{=}$

■ Square Roots, Cube Roots, Roots, Squares, Cubes, Reciprocals, Factorials, Random Numbers, π , and Permutation/Combination

- **Example 1:** $\sqrt{2} + \sqrt{3} \times \sqrt{5} = 5.287196909$ $\boxed{\sqrt{}} 2 \boxed{+} \boxed{\sqrt{}} 3 \boxed{\times} \boxed{\sqrt{}} 5 \boxed{=}$
- **Example 2:** $\sqrt[3]{5} + \sqrt[3]{-27} = -1.290024053$ $\boxed{\text{SHIFT}} \boxed{\sqrt[3]{}} 5 \boxed{+} \boxed{\text{SHIFT}} \boxed{\sqrt[3]{}} \boxed{(-)} 27 \boxed{)} \boxed{=}$
- **Example 3:** $\sqrt[7]{123} (= 123^{\frac{1}{7}}) = 1.988647795$ $7 \boxed{\text{SHIFT}} \boxed{\sqrt[3]{}} 123 \boxed{=}$
- **Example 4:** $123 + 30^2 = 1023$ $123 \boxed{+} 30 \boxed{x^2} \boxed{=}$
- **Example 5:** $12^3 = 1728$ $12 \boxed{x^3} \boxed{=}$
- **Example 6:** $\frac{1}{\frac{1}{3} - \frac{1}{4}} = 12$ $\boxed{()} 3 \boxed{x^{-1}} \boxed{-} 4 \boxed{x^{-1}} \boxed{)} \boxed{x^{-1}} \boxed{=}$
- **Example 7:** $8! = 40320$ $8 \boxed{\text{SHIFT}} \boxed{x!} \boxed{=}$
- **Example 8:** To generate a random number between 0.000 and 0.999 $\boxed{\text{SHIFT}} \boxed{\text{Rand}} \boxed{=}$ 0.664
(The above value is a sample only. Results differ each time.)
- **Example 9:** $3\pi = 9.424777961$ $3 \boxed{\text{SHIFT}} \boxed{\pi} \boxed{=}$
- **Example 10:** To determine how many different 4-digit values can be produced using the numbers 1 through 7
 Numbers cannot be duplicated within the same 4-digit value (1234 is allowed, but 1123 is not). $(840) 7 \boxed{\text{SHIFT}} \boxed{nPr} 4 \boxed{=}$
- **Example 11:** To determine how many different 4-member groups can be organized in a group of 10 individuals $(210) 10 \boxed{nCr} 4 \boxed{=}$

■ Angle Unit Conversion

- Press $\boxed{\text{SHIFT}} \boxed{\text{DRG}}$ to display the following menu.
- Pressing $\boxed{1}$, $\boxed{2}$, or $\boxed{3}$ converts the displayed value to the corresponding angle unit.
- **Example:** To convert 4.25 radians to degrees

D	R	G
1	2	3

$\boxed{\text{MODE}} \dots \boxed{1} \boxed{(\text{Deg})} 4.25 \boxed{\text{SHIFT}} \boxed{\text{DRG}} \boxed{2} \boxed{(\text{R})} \boxed{=}$ 4.25
243.5070629

■ Coordinate Conversion (Pol (x, y), Rec (r, θ))

- Calculation results are automatically assigned to variables E and F.
- **Example 1:** To convert polar coordinates ($r=2, \theta=60^\circ$) to rectangular coordinates (x, y) (Deg) $x = 1 \boxed{\text{SHIFT}} \boxed{\text{RCL}} 2 \boxed{\text{,}} 60 \boxed{)} \boxed{=}$ $y = 1.732050808 \boxed{\text{RCL}} \boxed{F}$
- Press $\boxed{\text{RCL}} \boxed{E}$ to display the value of x, or $\boxed{\text{RCL}} \boxed{F}$ to display the value of y.
- **Example 2:** To convert rectangular coordinates (1, $\sqrt{3}$) to polar coordinates (r, θ) (Rad) $r = 2 \boxed{\text{Pol}} 1 \boxed{\text{,}} \boxed{\sqrt{}} 3 \boxed{)} \boxed{=}$ $\theta = 1.047197551 \boxed{\text{RCL}} \boxed{F}$
- Press $\boxed{\text{RCL}} \boxed{E}$ to display the value of r, or $\boxed{\text{RCL}} \boxed{F}$ to display the value of θ .

Engineering Notation Calculations

- **Example 1:** To convert 56,088 meters to kilometers

$$\rightarrow 56.088 \times 10^3 \text{ (km)}$$

56088

- **Example 2:** To convert 0.08125 grams to milligrams

$$\rightarrow 81.25 \times 10^{-3}$$

0.08125

STATISTICAL CALCULATIONS

STANDARD DEVIATION

Use the key to enter the SD Mode when you want to perform statistical calculations using standard deviation.

SD

- In the SD Mode and REG Mode, the key operates as the key.
- Always start data input with (Scl) to clear statistical memory.
- Input data using the key sequence shown below. $\langle x\text{-data} \rangle$
- Input data is used to calculate values for n , $\sum x$, $\sum x^2$, \bar{x} , σ_n and σ_{n-1} , which you can recall using the key operations noted nearby.

To recall this type of value:	Perform this key operation:
$\sum x^2$	
$\sum x$	
n	
\bar{x}	
σ_n	
σ_{n-1}	

- **Example:** To calculate σ_{n-1} , σ_n , \bar{x} , n , $\sum x$, and $\sum x^2$ for the following data :
55, 54, 51, 55, 53, 53, 54, 52

In the SD Mode: (Scl) (Stat clear) 55 1.

Each time you press to register your input, the number of data input up to that point is indicated on the display (n value).

54 51 55 53 54 52

Sample Standard Deviation (σ_{n-1}) = 1.407885953

Population Standard Deviation (σ_n) = 1.316956719

Arithmetic Mean (\bar{x}) = 53.375

Number of Data (n) = 8

Sum of Values ($\sum x$) = 427

Sum of Squares of Values ($\sum x^2$) = 22805

Regression Calculations

Use the key to enter the REG Mode when you want to perform statistical calculations using regression.

REG

In the SD Mode and REG Mode, the key operates as the key.
Entering the REG Mode displays screens like the ones shown below.

Lin Log Exp \rightarrow
1 2 3

\leftarrow Pwr Inv Quad
1 2 3

- Press the number key (, , or) that corresponds to the type of regression you want to use.

- Press the number key (1), (2), or (3) that corresponds to the type of regression you want to use.
 - 1 (Lin): Linear regression
 - 2 (Log): Logarithmic regression
 - 3 (Exp): Exponential regression
 - ▶ 1 (Pwr): Power regression
 - ▶ 2 (Inv): Inverse regression
 - ▶ 3 (Quad): Quadratic regression
- Input data using the key sequence shown below. <x-data> [] <y-data> [DT]
- The values produced by a regression calculation depend on the values input, and results can be recalled using the key operations shown in the table below.

To recall this type of value:	Perform this key operation:
Σx^2	[SHIFT] [S-SUM] [1]
Σx	[SHIFT] [S-SUM] [2]
n	[SHIFT] [S-SUM] [3]
Σy^2	[SHIFT] [S-SUM] [▶] [1]
Σy	[SHIFT] [S-SUM] [▶] [2]
Σxy	[SHIFT] [S-SUM] [▶] [3]
\bar{x}	[SHIFT] [S-VAR] [1]
$x\sigma_n$	[SHIFT] [S-VAR] [2]
$x\sigma_{n-1}$	[SHIFT] [S-VAR] [3]
\bar{y}	[SHIFT] [S-VAR] [▶] [1]
$y\sigma_n$	[SHIFT] [S-VAR] [▶] [2]
$y\sigma_{n-1}$	[SHIFT] [S-VAR] [▶] [3]
Regression coefficient A	[SHIFT] [S-VAR] [▶] [▶] [1]
Regression coefficient B	[SHIFT] [S-VAR] [▶] [▶] [2]
Regression calculation other than quadratic regression	
Correlation coefficient r	[SHIFT] [S-VAR] [▶] [▶] [3]
\hat{x}	[SHIFT] [S-VAR] [▶] [▶] [▶] [1]
\hat{y}	[SHIFT] [S-VAR] [▶] [▶] [▶] [2]

- The following table shows the key operations you should use to recall results in the case of quadratic regression.

To recall this type of value:	Perform this key operation:
Σx^3	[SHIFT] [S-SUM] [▶] [▶] [1]
Σx^2y	[SHIFT] [S-SUM] [▶] [▶] [2]
Σx^4	[SHIFT] [S-SUM] [▶] [▶] [3]
Regression coefficient C	[SHIFT] [S-VAR] [▶] [▶] [3]
\hat{x}_1	[SHIFT] [S-VAR] [▶] [▶] [▶] [1]
\hat{x}_2	[SHIFT] [S-VAR] [▶] [▶] [▶] [2]
\hat{y}	[SHIFT] [S-VAR] [▶] [▶] [▶] [3]

- The values in the above tables can be used inside of expressions the same way you use variables.

Linear Regression

- The regression formula for linear regression is: $y = A + Bx$.
- **Example:**

Temperature	Atmospheric Pressure
10°C	1003 hPa
15°C	1005 hPa
20°C	1010 hPa
25°C	1011 hPa
30°C	1014 hPa

Atmospheric Pressure vs. Temperature Perform linear regression to determine the regression formula terms and correlation coefficient for the data nearby. Next, use the regression formula to estimate atmospheric pressure at -5°C and temperature at 1000 hPa. Finally, calculate the coefficient of determination (r^2) and sample covariance $\left(\frac{\Sigma xy - n \cdot \bar{x} \cdot \bar{y}}{n - 1} \right)$

In the REG Mode: $\boxed{1}$ (Lin)

$\boxed{\text{SHIFT}} \boxed{\text{CLR}} \boxed{1}$ (Scl) $\boxed{=}$ (Stat clear) 10 $\boxed{,}$ 1003 $\boxed{\text{DT}}$ $n = \text{REG}$ 1.

Each time you press $\boxed{\text{DT}}$ to register your input, the number of data input up to that point is indicated on the display (n value).

15 $\boxed{,}$ 1005 $\boxed{\text{DT}}$ 20 $\boxed{,}$ 1010 $\boxed{\text{DT}}$ 25 $\boxed{,}$ 1011 $\boxed{\text{DT}}$ 30 $\boxed{,}$ 1014 $\boxed{\text{DT}}$

Regression Coefficient A = 997.4 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{1} \boxed{=}$

Regression Coefficient B = 0.56 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{2} \boxed{=}$

Correlation Coefficient r = 0.982607368 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{3} \boxed{=}$

Atmospheric Pressure at -5°C = 994.6 $\boxed{(\text{)} \text{ (←)} 5 \text{ (→)} \boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{2} \boxed{=}$

Temperature at 1000 hPa = 4.642857143 1000 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{1} \boxed{=}$

Coefficient of Determination = 0.965517241 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{3} \boxed{X^2} \boxed{=}$

Sample Covariance = 35 $\boxed{(\text{)} \boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{3} \boxed{=}$

$\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{3} \boxed{\times} \boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{1} \boxed{\times} \boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{1} \boxed{+} \boxed{(\text{)} \boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{3} \boxed{-} \boxed{1} \boxed{)} \boxed{=}$

Logarithmic, Exponential, Power, and Inverse Regression

- Use the same key operations as linear regression to recall results for these
- The following shows the regression formulas for each type of regression.

Logarithmic Regression	$y = A + B \cdot \ln x$
Exponential Regression	$y = A \cdot e^{B \cdot x}$ ($\ln y = \ln A + B$)
Power Regression	$y = A \cdot x^B$ ($\ln y = \ln A + B \ln x$)
Inverse Regression	$y = A + B \cdot 1/x$

Quadratic Regression

- The regression formula for quadratic regression is: $y = A + Bx + Cx^2$.
- **Example:**

x_i	y_i
29	1.6
50	23.5
74	38.0
103	46.4
118	48.0

Perform quadratic regression to determine the regression formula terms for the data nearby. Next, use the regression formula to estimate the values for \hat{y} (estimated value of y) for $x_i = 16$ and \hat{x} (estimated value of x) for $y_i = 20$.

In the REG Mode: $\boxed{\text{▶}} \boxed{3}$ (Quad) $\boxed{\text{SHIFT}} \boxed{\text{CLR}} \boxed{1}$ (Scl) $\boxed{=}$ (Stat clear)

29 $\boxed{,}$ 1.6 $\boxed{\text{DT}}$ 50 $\boxed{,}$ 23.5 $\boxed{\text{DT}}$ 74 $\boxed{,}$ 38.0 $\boxed{\text{DT}}$ 103 $\boxed{,}$ 46.4 $\boxed{\text{DT}}$ 118 $\boxed{,}$ 48.0 $\boxed{\text{DT}}$

Regression Coefficient A = -35.59856934 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{1} \boxed{=}$

Regression Coefficient B = 1.495939413 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{2} \boxed{=}$

Regression Coefficient C = -6.71629667 $\times 10^{-2}$ $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{3} \boxed{=}$

\hat{y} when x_i is 16 = -13.38291067 16 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{3} \boxed{=}$

\hat{x}_1 when y_i is 20 = 47.14556728 20 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{1} \boxed{=}$

\hat{x}_2 when y_i is 20 = 175.5872105 20 $\boxed{\text{SHIFT}} \boxed{\text{S-VAR}} \boxed{\text{▶}} \boxed{\text{▶}} \boxed{2} \boxed{=}$

TECHNICAL INFORMATION

■ When you have a problem:

If your calculation results are incorrect or an error occurs, follow these steps:

1. Press [SHIFT] + [CLR] + [3 (Mode)] + [=] to reset all modes and settings.
2. Check your formula to ensure it is correct.
3. Enter the correct mode and try the calculation again.

If the problem persists, press the [ON] key. This will run a self-check and clear all memory if any issues are found. Always keep written copies of important data.



ERROR MESSAGES:

If an error message appears, the calculator will be locked. Press [AC] to clear the error, or press [REPLAY] or [EDIT] to view and correct the calculation. See "Error Locator" for details.

MATH ERROR

- **Cause:**
 - The result is outside the allowable range.
 - Using a value that exceeds the input range for a function.
 - Performing an illogical operation (e.g., division by zero).
- **Action:**
 - Check your input values to ensure they are within the allowable ranges, especially values in memory.

STACK ERROR

- **Cause:**
 - The numeric or operator stack capacity is exceeded.
- **Action:**
 - Simplify the calculation. The numeric stack has 10 levels, and the operator stack has 24 levels.
 - Divide the calculation into smaller parts.

SYNTAX ERROR

- **Cause:**
 - Attempting an invalid mathematical operation.
- **Action:**
 - Press [REPLAY] or [EDIT] to locate the error and make corrections.

ARG ERROR

- **Cause:**
 - Improper use of an argument.
- **Action:**
 - Press [REPLAY] or [EDIT] to locate the error and make corrections.

SAFETY AND HANDLING PRECAUTIONS



After removing the battery from the calculator, store it in a safe place away from small children to prevent accidental swallowing. Do not expose batteries to direct heat or dispose of them by burning. Only use the type of battery specified in this manual for the calculator.

- **Initial Use:** Press the RESET key before using the calculator for the first time.
- **Battery Replacement:** Replace the battery at least once a year, even if the calculator is working fine. Dead batteries can leak and cause damage. Never leave a dead battery in the calculator.
- **Battery During Shipment:** The included battery may discharge slightly during shipping and storage, possibly requiring earlier replacement than usual.
- **MEMORY :** Low battery power can corrupt or erase memory contents. Always keep written records of important data.
- **Temperature Extremes:** Avoid using or storing the calculator in extremely hot or cold areas. Low temperatures can slow down or stop the display, and high temperatures can damage the calculator and shorten battery life. Avoid direct sunlight, windows, heaters, or any hot spots.
- **Humidity and Dust:** Avoid areas with high humidity or dust. Exposure to these conditions can damage the internal circuitry.
- **Impact:** Do not drop the calculator or subject it to strong impacts.
- **Twisting/Bending:** Avoid twisting or bending the calculator. Do not carry it in tight-fitting clothing that might cause pressure.
- **Disassembly:** Do not attempt to take the calculator apart.
- **Key Pressing:** Avoid using pointed objects, like ballpoint pens, to press the keys.
- **Cleaning:** Use a soft, dry cloth to clean the calculator. If very dirty, use a cloth moistened with a mild detergent solution. Avoid using volatile agents like thinner or benzene, which can damage the case and remove printed markings.

WARRANTY INFORMATION

- Your SC-216 scientific calculator comes with a standard 6-months warranty. For extended coverage up to 12 months, register your product on our [website](#).

CUSTOMER SUPPORT

For any inquiries, technical support, or assistance with your SC-216 Scientific Calculator, please contact our customer support team. We're here to help!

- **Email:** support@redstartec.com
- **Website:** www.redstartec.com

SPECIAL OFFER

Thank You for Choosing SC-216 Scientific Calculator !

As a token of our gratitude, claim a one-time coupon code for a discount on your next purchase of our scientific calculator or any other Red Star tec products !

How to Claim Your Coupon Code:

OPTION 1: Visit Our Website and fill out the details:

<https://redstartec.com/TY-discount>

OPTION 2: Scan the QR Code:

- Use your smartphone's camera to scan the QR code which would direct you to website and fill up your details.
- Fill out the required details.



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