

# NEW SPECIAL fx

THE CASIO fx-8200 AU



APPROVED  
BY AUSTRALIAN  
EXAM  
AUTHORITIES  
FROM 2023

BOOKLIST FOR BACK TO SCHOOL 2024

**CASIO**  
EDUCATION

# THE NEW CASIO fx-8200 AU

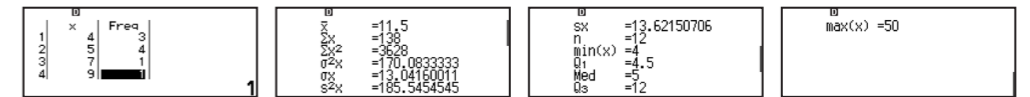
Retaining all the great features of the fx-82AU PLUS II and fx-100AU PLUS 2nd edition, the fx-8200 AU brings a significant increase in functionality and user experience, bringing Australia's leading scientific calculator into the 21st century.

While the much-loved fx-82AU PLUS II 2nd edition continues to be a staple of Australian mathematics technology, Casio has worked with Australian teachers to evolve and design a tool that better suits the needs of scientific calculator users in Australia.



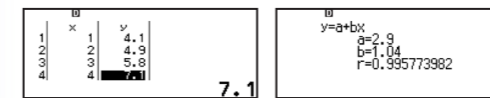
## ALL SUMMARY STATISTICS AND REGRESSION INFORMATION IN LESS KEY PRESSES AND DISPLAYED ALL AT ONCE

Calculate the summary statistics for the data set: 4, 4, 4, 5, 5, 5, 5, 7, 9, 15, 25, 50.



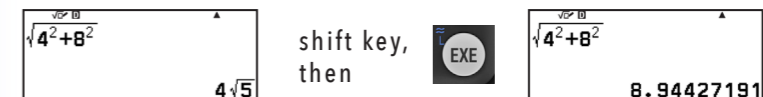
Determine the least squares regression line for:

x	1	2	3	4	5
y	4.1	4.9	5.8	7.1	8.2

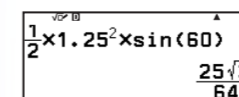


## THERE HAVE ALWAYS BEEN DECIMAL APPROXIMATIONS BUT NOW... EXACT VALUE OUTPUT AS WELL

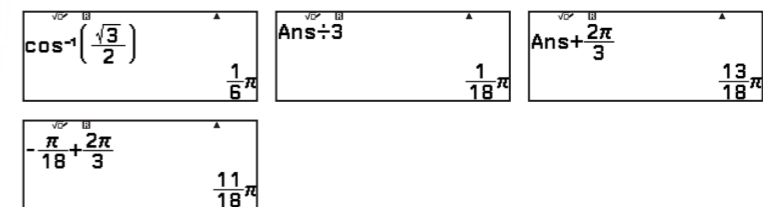
What is the length of the hypotenuse of a right-angled triangle with perpendicular sides of length 4 cm and 8 cm?



What is the area of an equilateral triangle with side length 1.25 cm?

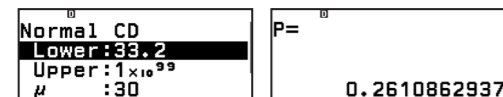


Solve  $\cos(3x) = \frac{\sqrt{3}}{2}$  for  $0 \leq x \leq \pi$ .

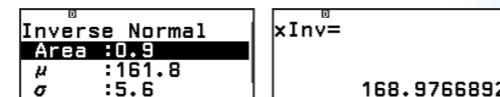


## PROBABILITY CALCULATIONS WITH EASE

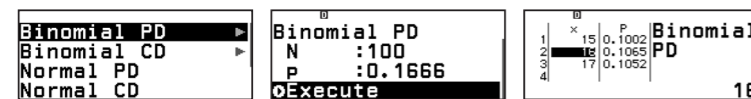
If  $X \sim N(30, 5^2)$ , then  $P(X > 33.2) = ?$



What is the height of the shortest person in the top 10% of the height ( $H$ ) distribution  $H \sim N(161.8, 5.6^2)$ ?

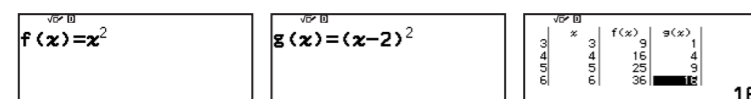


Let  $X$  be the number of 6s that result when a fair die is rolled 100 times. What is the most likely value of  $X$ ?

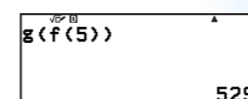


## INVESTIGATE FUNCTIONS BY TABULATING VALUES OF $f(x)$ & $g(x)$

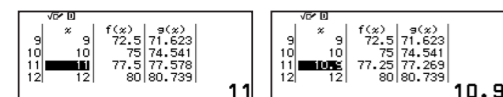
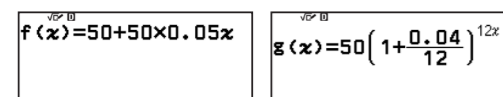
How is the function  $g(x) = (x-2)^2$  different from  $f(x) = x^2$ ?



If  $f(x) = x^2$  and  $g(x) = (x-2)^2$ , what is  $g(f(5))$ ?



Solve  $50 + 50 \times 0.05x = 50 \times (1 + \frac{0.04}{12})^{12x}$



VAST IMPROVEMENT ON THE FX-82AU & FX-100AU



# THINK ABOUT DIFFERENT FORMS OF A NUMBER USING



How does  $\frac{22}{7}$  compare to  $\pi$ ?

$\frac{22}{7}$	Decimal Recurring Decimal Improper Fraction Mixed Fraction	$\frac{22}{7}$	$3\frac{1}{7}$
$\frac{22}{7}$	shift key, then	$\frac{22}{7}$	3.142857143
$\frac{22}{7}$	Standard Decimal	$\frac{22}{7}$	3.142857
$\pi$	Standard Decimal Prime Factor ENG Notation	$\pi$	3.141592654

What number has the decimal form  $0.\overline{252}$ ?  
What about  $0.\overline{123}$ ?  
What is going on here?

$0.\overline{252}$	$\frac{28}{111}$
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Which has more factors, 2700 or 66825?

2700	Standard Decimal Prime Factor ENG Notation	2700	$2^2 \times 3^3 \times 5^2$
66825		66825	$3^5 \times 5^2 \times 11$

## THE CASIO fx-8200 AU WILL TAKE ALL YOUR STUDENTS FROM YEAR 7 TO 12\* AND BEYOND

Calculations required in examinations, displayed as you have come to expect.

$\frac{51n(\frac{3}{7})}{21n(1.5)}$	$\frac{12}{\pi} \cos^{-1}(\frac{1}{\sqrt{2}} - \frac{\pi}{16})$
5.224234117	3.952381179
$800 \times (\frac{1-1.005^{34}}{1-1.005})$	
95699.4464	

**NOW POSSIBLE ON THE fx-8200 AU** Cultivate student curiosity about logarithms.

$\log_5(625)$	$\log_9(3)$
4	$\frac{1}{2}$
$\log_9(16)$	
$\frac{4}{3}$	

Think about how the GCD and LCM are related.

$GCD(6, 8) \times LCM(6, 8)$	48
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**NOW POSSIBLE ON THE fx-8200 AU** Investigate interesting summations.

$\frac{1}{d} + \frac{1}{d^2} + \frac{1}{d^3} + \frac{1}{d^4} + \dots + \frac{1}{d^n} = \sum_{x=1}^n \frac{1}{d^x} = ?$	$\sum_{x=1}^{10} (\frac{1}{4^x})$	$\sum_{x=1}^{10} (\frac{1}{5^x})$
	0.3333330154	0.2499999744

\*Except in instances where a graphing or CAS calculator is required.

Continued on next page.

**NOW POSSIBLE ON THE fx-8200 AU**

Investigate interesting products.

$$\frac{7}{9} \times \frac{26}{28} \times \frac{63}{65} \times \frac{124}{126} \times \dots \times \frac{x^n - 1}{x^n + 1} = \prod_{x=2}^n \frac{x^3 - 1}{x^3 + 1} = ?$$

$\prod_{x=2}^5 (\frac{x^3-1}{x^3+1})$	$\prod_{x=2}^{10} (\frac{x^3-1}{x^3+1})$	$\prod_{x=2}^{50} (\frac{x^3-1}{x^3+1})$
0.6888888889	0.6727272727	0.6669281046

Vector calculations.

VctA x VctB	VctAns = $\begin{pmatrix} 8 \\ -3 \end{pmatrix}$	-7
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Complex number calculations.

Arg(1 + $\sqrt{3}i$ )	$-4 + 4i$	$\frac{1}{3}\pi$	$4\sqrt{2} \angle \frac{3}{4}\pi$
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## fx-8200 AU AT A GLANCE

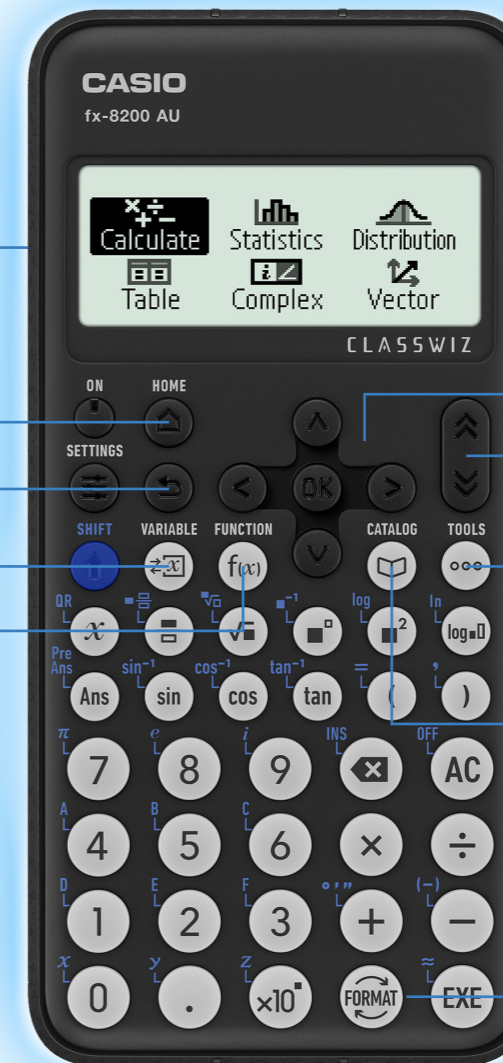
Six powerful applications

Press to show all the applications

Go back one screen

See the value of all variables on one screen

Define a function for tabulation



Cursor Keys

Page scroll keys

Application specific settings

Sensibly organised and easily accessible functions

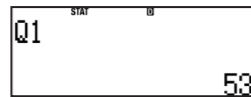
Change the format in which a number is displayed

## fx-82AU PLUS II 2ND EDITION

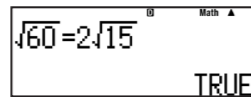
Australia's leading scientific calculator is still here, to serve you and your students.



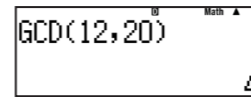
Calculation of the median and quartiles



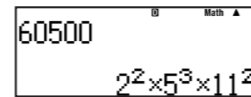
Verification of equalities and inequalities



Greatest common divisor and lowest common multiple



Prime factorisation

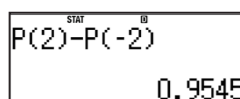


## fx-100AU PLUS 2ND EDITION

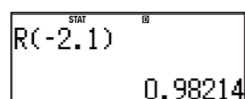
The wonderful 100 is also still here to serve your students.

If  $Z \sim N(0,1)$

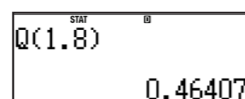
a. find  $P(-2 \leq Z \leq 2)$



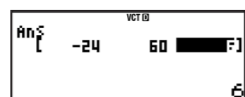
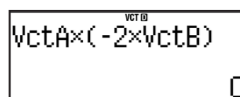
b. find  $P(Z > -2.1)$



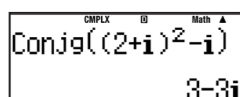
c. find  $P(0 < Z < 1.8)$



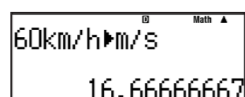
Vector arithmetic



Complex number calculations



Measurement - 40 different unit conversions



## HOW DOES THE CASIO fx-8200 AU COMPARE?

Feature	fx-8200 AU	fx-82AU PLUS II 2nd Edition	fx-100AU PLUS 2nd Edition
RRP	\$49.95	\$44.95	\$54.95
All the expected basic calculator functionality	✓	✓	✓
Natural (textbook) display	✓	✓	✓
Prime factorisation, GCD & LCM	✓	✓	✓
Verify	✓	✓	✓
Measurement conversions	✗	✗	✓
Vector calculations	✓	✗	✓
Complex number calculations	✓	✗	✓
<b>Exact value output</b>	✓	✗	✗
<b>Probability calculations</b>	✓ (Normal, binomial and more user friendly)	✗	✓ (Seriously limited)
<b>Vastly improved statistics interface</b>	✓	✗	✗
<b>Tabulate</b>	✓	✗	✗
<b>Logarithms of any numerical base (as well as 10 and e)</b>	✓	✗	✗
<b>New and unambiguous way to convert between forms of numbers</b>	✓	✗	✗
<b>Recurring decimals, output and calculations</b>	✓	✗	✗
<b>Summation and product of series</b>	✓	✗	✗
<b>Modern user interface, paving the way for future improvements</b>	✓	✗	✗

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NEW resources and classroom activities coming soon



NEW how-to manual coming soon

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