Graphical Times.
Volume 8, Issue 31, 2009.

Welcome back to term 3! Hope that you have had a restful break and been able to read a few non-mathematical books. We hope you enjoy the read in this terms newsletter. The 11th New Zealand Mathematics Teachers Conference will be held in Palmerston North from 29th September – 2nd October 2009. Visit: http://www.nzamt11.co.nz/page.php?13 and the NZSA 2009 Conference will be held in Wellington from 2nd – 3rd September. An Educational Session will be held on the Thursday afternoon. The webpage is http://msor.victoria.ac.nz/Events/NZSA2009/NZSA2009, please visit for more information.

And the winners are...

Term 2 promotion winners are:
1st Fregburg HS
2nd Rosmini College
3rd Massey High School
Congratulations to these term 2 winners.
A similar promotion will run in 2010.
Many thanks to the schools that qualified for the criteria set for the promotion.

Project ReCalc

Casio's 'Project ReCalc' came to a successful conclusion earlier this year with over 2,000 registrations and 70 unique entries. Congratulations to Sam Ridling, whose ultra-detailed design won her a bunch of great prizes including her design printed on a limited edition Huffer T and sold within their collection with all proceeds going to Math's Education. Project ReCalc will be happening again next year with details to come at a later date. So in the mean time keep your eye out for more info and dates as they are finalised or check out www.projectrecalc.co.nz.

What's in here!

Included in this terms newsletter are:

- **Calculator activities:** **Classpad 330+** – Questions to solve on the Classpad
- **Worksheets for:** **Classpad 330 +–** The sliding rectangle - animation.
  Graphic calculator – Parametric and Polar coordinate graph Drawing.
- **Term 3 pricing list**
- **The Graphic Technologies Catalogue is available on request please email us @** graph.tech@xtra.co.nz

The first 20 schools to purchase via the website this term will receive an 'extra something' in their order.

Specials for Term 3 promotions.

Graphic Technologies has been able to secure special pricing on the FX82BU, the Classpad 330+ and the FX991ES.

FX82BU Scientific calculator:

FX82BU scientific calculator (Minimum order is 10) 	10 - 30	$15.00
	31 - 50	$14.75
	51 - 100	$14.50
	101 - 200	$14.25
	200 +	$14.00

Mathematics Department Cycle [Pass it on to . . .]

	→		→		→		→		→	
	→		→		→		→		→	

Classpad 330+ CAS calculator: Purchase a class set of 30 units - $4500 + GST. ($150 + GST per unit) and receive free, the FACP330B, School License, $879.00 RRP.

ClassPad330+	1 - 2	$180.00
	3 - 5	$170.00
Graphic Technologies wants you to get your hands on one!	6 - 10	$165.00
	11 - 29	$160.00
SPECIAL: Receive a free FACP330B – School License worth $879.00, with the class set purchase.	Class set of 30 special	$4,500.00

All pricing is valid until 10th September 2009 or while stocks last! See the attached flyer to this mailout.

The FX991ES

Graphic Technologies is New Zealands' sole reseller of this calculator. This calculator has 'Natural Textbook display'. A NON-PROGRAMMABLE calculator **Allowed and recommended for the Cambridge Examinations**

See the Pricing list below or the Graphic Technologies 2009 catalogue for more details of this calculator.

Product	**# of Units**	**Price (excl GST) per unit**
FX991ES scientific calculator Promotion (Recommended for Cambridge Examinations) 	1 - 2	$75.00
	3 - 5	$74.00
	6 - 10	$73.00
	11 - 29	$71.00
	Class set of 30 special	$2130.00
Graphic Technologies wants you to get your hands on one!		

All pricing is valid until 3rd October 2009 or while stocks last!

AAA batteries and Back up batteries [CR2032 Lithium].

The graphic calculators have a back up battery to save data if the 4 AAA batteries fail. These have a life span of 2 - 4 years, dependent on usage. It is good practice to replace these rather than wait for them to fail also, particularly if you operate class sets or hire them out to students for the academic year. ***Graphic Technologies*** sell these batteries and will have special pricing operating term 3 for bulk orders. **Again the demand for this product over term 1, 2 and 3 has been high! Particularly from schools checking their class sets of graphics. We are again keeping this special open for term 3. Purchasing 10+ will be $3.25 + GST per each: 20+ will be $3.10 + GST per each: 50+ will be $3.00 + GST per each.**

The 4 AAA batteries generally have a life span of 1 - 2 years, dependent on usage. It is good practice to replace these also than waiting for them to fail. If your school is having mock examinations this term or the beginning of term 4 then it would be good practice to change them in preparation and always have a spare set to put in the calculator just in case the 'Low battery' screen reading displays during the examinations. ***Graphic Technologies*** sell these batteries and have a special pricing operating in term 3 for bulk orders. **Purchasing 24 packs (Contains 2 AAA) will be $2.45 + GST per each: 48 packs will be $2.40 + GST per each: 49+ will be $2.30 per each.** We also sell AA batteries in 2 and 4 packs see the Term 3 pricing list.

EA-200 Data logger and EA-2 Motion Sensor.

These connect to the graphic calculator or Classpads and as a special NZAMT11, term 3, promotion we are offering a 50% discount on these two accessories (While stocks last.)

. The EA200 can connect 7:1 parent and up to 7 graphic calculators or ClassPad 300's for data / programme transfer and the Motion Sensor.

CASIO MOTION SENSOR
Emits Ultrasonic pulses
Detects Pulses returned
Can connect to EA100

EA200 CASIO DATA LOGGER
Data Analyser
Includes Temperature, Optical and
Voltage Probe

Data collection at up to 50,000 points per second

Product	EA-200 Data Logger 	EA- 2 Motion Sensor 
Price (excl GST) per unit	$250.00	$250.00

Both of these models have a RRP of $799.00

Workshop opportunities.

Workshop opportunities, if you would like to have a workshop for teachers and or students then please make contact with ***Graphic Technologies***. A large number of schools are taking up this opportunity either singularly or as a cluster of schools with both the graphic calculator or with the ClassPad330+, to look at how the graphic calculator and CAS could impact on and be integrated into your classroom practices

Worksheets downloaded off the web.

Visit Monaco Corporation's or Graphic Technologies website to view and download worksheets. There are links to other informative mathematics education websites too. For teachers we currently offer a large number of 'classroom ready' resources available are designed primarily for the CASIO® FX9750G, FX9750G+, CFX9850GB, CFX9850GB+, CFX9850GC+ FX9750GA+ models of graphical calculators and the ALGEBRA 2.0. There is also a variety of activity sheets designed for the ClassPad300 and 330+ models. All of the activities and worksheets are designed for beginners to advanced users of the GC and CAS. More have been added to the website since the last newsletter.
Visit: www.monacocorp.co.nz/casio and http://graphic-technologies.co.nz.

Websites of mathematical interest.

The BBC have an excellent radio show on statistics called "More or less". The web page is here: http://news.bbc.co.uk/1/hi/programmes/more_or_less/default.stm. You can download the podcasts from here: http://downloads.bbc.co.uk/podcasts/radio4/moreorless/rss.xml. Recent episodes include interviews with David Spiegelhalter, and topical items on the numbers behind swine flu and the credit crunch.
What's the fuss about the number 9!
http://www.teachertube.com/viewVideo.php?video_id=108197&title=Math_Game_Crazy_9s
http://www.mathopenref Where geometrical constructions are demonstrated with supporting statements.

CASIO Support Classroom E-mail News, What's New.

Main Features of the classpad 330+

Pen touch operation

- Computer-like intuitive operations for menu selection, button operations, etc.
- Drag & drop supports dragging of an input expression to a graph screen for instant graphing.

CAS (Computer Algebra System)

- Natural display input enables input of fractions, differentials, integrals, Σ calculations, lim calculations, and other expressions in the same format as that used in mathematics texts.
- Function conversion function
- Algebra Assistant

eActivity Application Creation

- Buttons for expression processing, text statements, and eActivity function recall
- Each teacher (or student) can create activities on there own calculator.
- Button for recalling user-created programs

Application and Classroom

- Go-along-anywhere digital text book and digital handout functions
- Allows tailoring of classroom materials to local needs
- Contents installable using data communication

Presentation Application

- Register application screen shots for playback in slideshow format.
- Great for presenting eActivity results and other lessons.
- Includes Auto Play, Manual Play, and page editing functions

Geometric Graphing

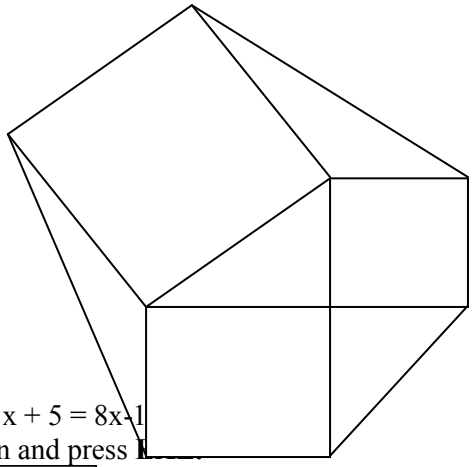
- Constraint Geometry (geometric functions for education)
- Geometric figure graphing (triangle, polygon, circle, etc.)
- Geometric figure analysis (angle, length)
- Animation

- 3-Dimensional Graphing
- Trace, Zoom, Rotate

For more information about the ClassPad visit:
http://edu.casio.com/products/classpad/

Classroom Activity.

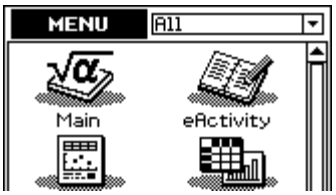
What is the relationship between the four triangles that are formed in the diagram on the right illustrating a 'digression' from Pythagoras's theorem?



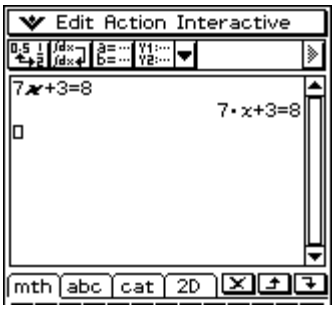
Prove that $(a+b)^2+c^2$ = total area of the figure illustrated.

CAS Activities

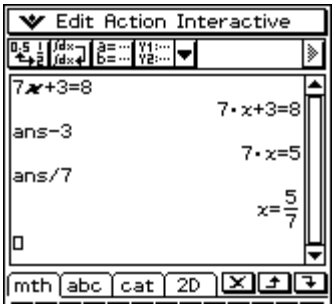
Balancing linear equations by solving directly via the MAIN icon.



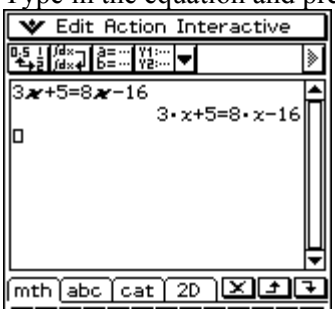
Example 1: Solve 7x + 3 = 8
Type in the equation and press **EXE**



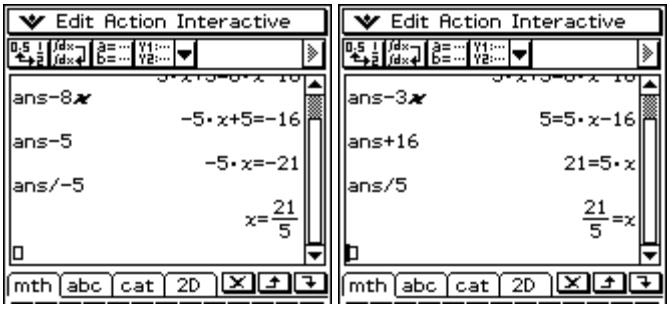
Use **ans** and an operation to reduce the LHS of the equation to x and the RHS of the equation will reduce to the required solution.



Example 2: Solve 3x + 5 = 8x-1
Type in the equation and press



Reduces to . . . .



Watching the 'chain of reasoning' change to solve the original equation will assist in clarifying the necessity to 'undo' the order of operations BEDMAS. The student can 'experiment' in solving linear (or another) equation using the ClassPad330+ and discovering the mathematical techniques required.

A last word!

Well again, that's all I can fit onto the 4 pages! Enjoy the winter term! Hope to see you at some workshops at NZAMT11 or next term via this newsletter or otherwise! If you would like to contribute or have suggestions as to what you would like to have discussed via this medium, please do not hesitate to contact us either by snail - mail, email, website, telephone, text or fax.

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