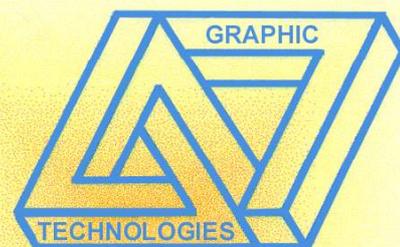


# Graphical Times.

## Volume 7, Issue 26, 2008.



Welcome back to term 2!

Included in this terms newsletter are:

Calculator activities –

- Worksheets for: Graphic calculator - Bisection method  
- Random Walk Art  
ClassPad 300 - Radial Survey

Term 2 pricing list – included in this mailout along with special promotion valid from 31<sup>st</sup> May - 31<sup>st</sup> July 2008 (or while stocks last) along with term two specials and promotions.

### Specials for Term 2.

1. The RM9000SET, RMClassPadSET, VI9850GSET, EA 200, EA2, SB-62 and SB-87 specials.

RM9000SET - \$500 + GST (16 only available) RRP: \$1,100 + GST

RMCLASSPADSET - \$500 + GST (28 only available) RRP: \$850 + GST

VI9850GSET - \$500 + GST (4 only available) RRP: \$850.00 + GST

EA200 data logger – Promotion special, see below.

EA200 data logger – Promotion special, see below.

SB-62 Cable (Calculator to calculator) - \$15 + GST (46 only available) RRP: \$30.00 + GST

SB-87 Cable (Calculator to computer) - \$60 + GST (13 only available) RRP: \$110.00 + GST

2. We are also running another graphics calculator promotion. Buy 50 FX9750G+ graphic calculators and get 10 free plus a data analysis system.

**THE PACKAGE OFFER TO SCHOOLS: 1st May to 31st July 2008 (or while stocks last)**



	Normal Cost (excl. GST)	Special Price (excl. GST)	
FX9750GPLUS	\$67.00	\$67.00	
EA200	\$755.56	\$0.00	
EA2	\$755.56	\$0.00	
<b>BUY 50 GET 10 FREE PLUS DATA ANALYSIS SYSTEM.</b>			
	Normal Cost (excl. GST)	Special Price (excl. GST)	Savings
FX9750GPLUS	\$4,020.00	\$3,350.00	\$670.00
EA200	\$755.56	\$0.00	\$755.56
EA2	\$755.56	\$0.00	\$755.56
<b>Total</b>	<b>\$5,531.12</b>	<b>\$3,350.00</b>	<b>\$2,181.12</b>

***See the attached Flyer to this mailout.***

### Another promotion on the CFX9850GC + [with 64kB memory].

The CFX-9850GCPlus has over 900 functions and 64KB total memory. E.g. List editor creates, edits and manages 36 separate data lists. **Special price for term 2, 2008 - \$98+GST [RRP \$189.00]**

Is there a new teacher in the Mathematics Department? Or one for yourself or the entire mathematics department members - treat them to the NEW CFX9850GCplus model, a colour graphic with 64KB memory – a saving of over 40%. **Or alternatively, buy 19 FX9750G+ and 1 CFX9850GC+ for the pricing of 20 FX9750G+ in bulk orders.** [Note: Please indicate the 19+1 deal on your order form and cannot be used in conjunction with the 'Package offer to schools' graphic calculator promotion', see below.]

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

	→		→		→		→		→	
	→		→		→		→		→	

## 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 ClassPad300, to look at how the graphic calculator and CAS could impact on and be integrated into your classroom practice.

## Some basic functions on the ClassPad300.

**A Problem: Can you solve this problem using the ClassPad300+?**

A circle with diameter 8cm passes through two vertices (corners) of a square with sides of 5cm.

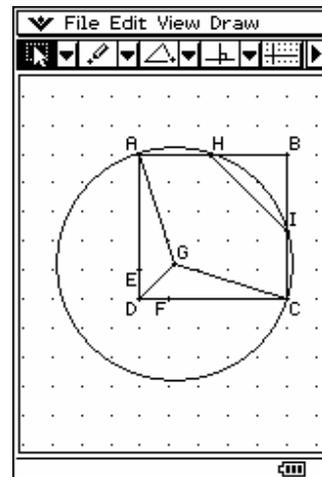
Calculate the area of the region where the circle and square overlap if the circle passes through opposite vertices of the square.

### **Replacement parts:**

Stylus: Part No: 1010 4597 \$4.00 + GST

Protective Sheet: Part No: 1011 7012 \$4.00 + GST

Hard Cover: Part No: 1011 4575 \$4.00 + GST



Download the latest resources. ClassPad Handheld OS updater to Version 3.03 The latest version of OS updaters for ClassPad series handheld can be downloaded by going through the Casio Educational website.

(A) Visit the Casio Educational website/ Casio Online Service (Downloads) page: <http://edu.casio.com/dl/>

(B) [Enter] [Accept] [Log in] You need to use your ID (E-mail address) and your password.

(C) Select the following items for ClassPad 300 series, and then click [NEXT] - OS Update

(D) Click underlined item to download the file.

Find the answers to a host of frequently asked questions about your ClassPad by going through the following Casio Support page. World.casio.com - FAQs: <http://world.casio.com/calc/support/en/faq.html>

Questions such as, "How do I upgrade to the latest version of ClassPad Manager?" or "How do I upgrade to the latest version of ClassPad Handheld OS?" are answered.

If you want to stop subscribing Casio Classroom E-mail News, visit: [http://edu.casio.com/edu\\_mail/](http://edu.casio.com/edu_mail/)

Casio Worldwide Education Website: <http://edu.casio.com>

Information about ClassPad: <http://edu.casio.com/products/classpad/>

## Worksheets downloaded off the web.

Visit Monaco Corporation's website to view and download the 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+ models of graphical calculators and the ALGEBRA 2.0. There is also a variety of activity sheets designed for the ClassPad 300 models. All of the activities and worksheets are designed for beginners to advanced users of the G.C. and C.A.S. all useful for all secondary year levels. More have been added to the website since the last newsletter. Visit: [www.monacocorp.co.nz/casio](http://www.monacocorp.co.nz/casio)

## Websites of mathematical interest.

Interactive games. <http://www.funbrain.com/kidscenter.html>

The National Library of virtual manipulatives. <http://nlvm.usu.edu/en/nav/vlibrary.html>

Measurement. [http://nlvm.usu.edu/en/nav/topic\\_t\\_4.html](http://nlvm.usu.edu/en/nav/topic_t_4.html)

Interactive measurement games <http://www.woodlands-junior.kent.sch.uk/maths/measures.htm#Area>

30 or 60 day trial version downloads are available for:

Autograph 3.2. Visit: [www.autograph-maths.com](http://www.autograph-maths.com)

The Geometer's Sketchpad, Tinkerplots and Fathom. Visit: <http://www.keypress.com/>

Maths Resources. Visit: [www.schoolhousetech.com](http://www.schoolhousetech.com)

## Help Desk.

**Question:** marked level 2 Algebra papers last year and there was a question wanting the intersection points of a line and a circle. Some students had done it on the graphics calculator but I can't seem to figure out how to do it on the Casio fx-9750G PLUS. How do I graph a circle and a line on the same grid so the intersection points can be found using G-

Solve? I know it can be done by graphing the two halves of the circle as two separate functions but I wondered if there was a more direct way that does not involve rearranging the circle formula.

**Response:** yes they can and that is 'just about right!

Need to write the equation for the circle as  $y = \sqrt{r^2 - x^2}$  and  $y = -\sqrt{r^2 - x^2}$  form and then use the G-Solve to find the intersection points.

Only in Conics where you can only find the x-and y intercepts, centre and radius

So if the students rearranged the 'circle = line' to 'circle - line = 0' then this could be done by finding the roots via G-solve in CONICS.

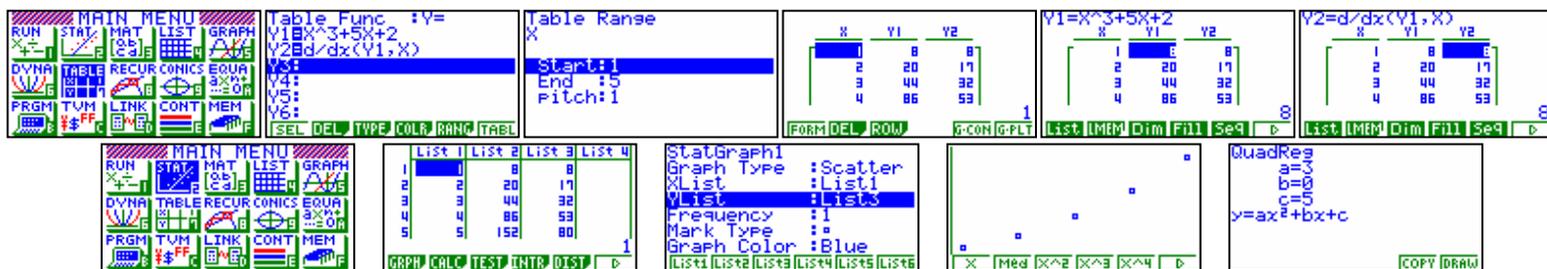
## Classroom Activities.

**Extracts from: Level 2 Mathematics, 2007 Achievement Standard 90286 Find and use straightforward derivatives and integrals.**

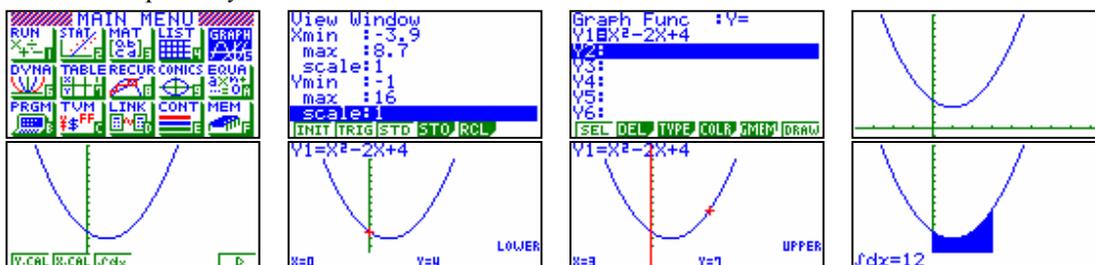
The point P(-2, 4) lies on the curve  $y = x^3 - 5x + 2$ .  
Find the gradient of the tangent to the curve at point P.



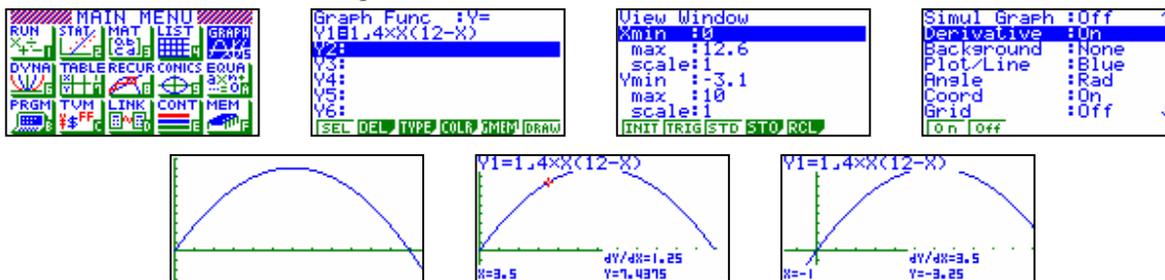
OPTN  
then [F4]



The curve has the equation  $y = x^2 - 2x + 4$ . Calculate the shaded area between  $x = 0$  and  $x = 3$ .

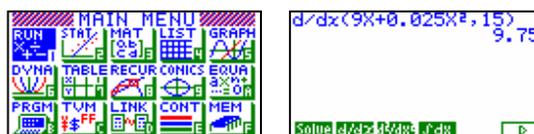


A parabola has equation  $y = \frac{1}{4}x(12 - x) = 3x - \frac{1}{4}x^2$   
Find the value of  $x$  where the slope of the curve is 3.5



Water is being added to a trough. The volume  $V$  litres of water in the trough is given by:

$V = 9h + 0.025h^2$  where  $h$  is the depth of water in centimetres. Find the rate of change of the volume, with respect to  $h$ , when the water has a depth of 15 cm.



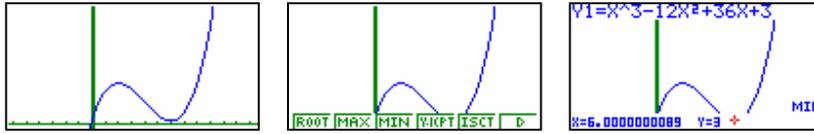
OR



Transfer to List 1, 2 and 3 via OPTN, [F1] [F2] L→M



The daily profit (in thousands of dollars) from sales of a chemical is given by:  
 $P(x) = x^3 - 12x^2 + 36x + 3$ , for  $1 < x < 8$  where  $x$  is the number of tonnes of chemical sold daily. What is the minimum daily profit?

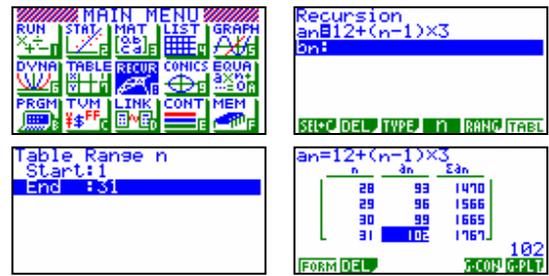


OR



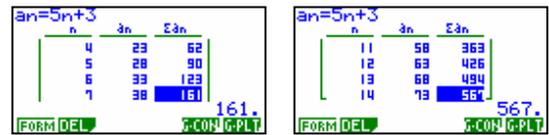
**Extracts from: Level 2 Mathematics, 2007 Achievement Standard 90290 Solve straightforward problems involving arithmetic and geometric sequences.**

A coalmine has a number of seams from which coal is extracted. Miners start work on Seam A. On the first day they extract 12 tonnes of coal. On the second day they extract 15 tonnes and on the third day 18 tonnes. Their productivity increases at the same rate of 3 extra tonnes each day. How many tonnes would they extract **on the 31st day**?



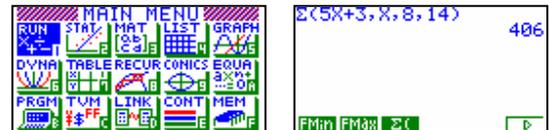
At Seam B the **total** amount of coal that is extracted in the second week (from the 8th to the 14th day) is given by:

$$T = \sum_{n=8}^{14} (5n+3)$$
 Find the value of  $T$ .

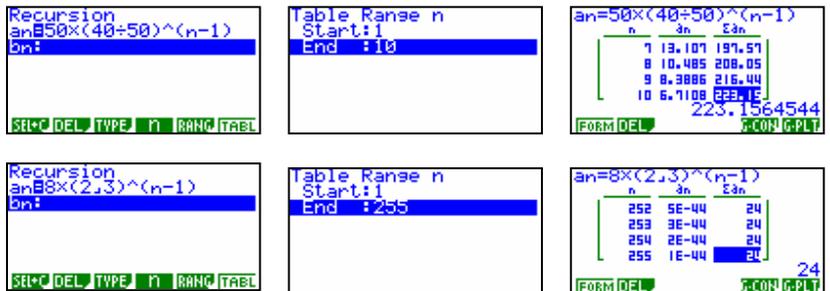


OR

At Seam C the miners extract 50 tonnes of coal on the first day. On the second day, only 40 tonnes of coal are extracted and on the third day, 32 tonnes are extracted. If this pattern continues (so  $r = 0.8$ ), then what would be the **total** amount of coal extracted after 10 days?



At Seam D the miners extract 8 tonnes of coal on the first day. Each day they extract two-thirds of the amount extracted the previous day. If the mining continues indefinitely, how much coal will eventually be extracted from this seam?



OR



**A last word!**

Well again, that's all I can fit onto the 4 pages! Enjoy and have a great term 2! Hope to see you at some workshops 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 either by snail - mail, email, telephone, text or fax.

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