

Graphical Times.

Volume 10, Issue 40, 2011.



Welcome back to the start of term 4! We hope you have had a restful break – not long to go until December!

What's in here!

Included in this terms newsletter are:

Calculator activities for the Classpad 330+ and Casio graphic calculator

- Worksheet for the Classpad 330 +:
- Worksheets for the FX9750GII and similar models:

Term 4, 2011 and 'Back to School' pricing list. Valid until 29th February 2012, while stocks last.

N.B. The 2011 Graphic Technologies Catalogue is available on request.

Please email us: graph.tech@xtra.co.nz to receive your free copy.

Graphic Technologies School Price List Term 4, 2011 and 'Back to School' pricing until 28th February 2012.

See our **hot competitive pricing** valid until the end of February 2012.

For the first 10 school orders received from the start of term 4 for orders of 20+ FX9750Gii, there is a free EA-2 Motion Sensor and associated cabling added to your order, RRP \$300+GST. [See the pricing sheet for more products.](#)

Product	# of Units	Price per unit (excl GST)
FX9750GII graphic calculator (monochrome) RRP \$129.95	1 - 10	\$79.50
	11 - 19	\$78.00
	20 +	\$75.50
Data projector XJA130 New pricing [Limited supply]	NA	\$1425.00
Data projector XJA145 New pricing [Limited supply]	NA	\$2000.00
FX82 AU scientific calculator New product!	1 - 9	\$20.00
FX82 AU scientific calculator New product!	10 +	\$19.00



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 and the ClassPad330+, to look at how the graphic calculator and CAS could impact on and be integrated into your classroom practices.

The FX82AU.

Top Schools programme – This programme is for those schools who wish to support and booklist the FX82AU. School who are part of this will get ongoing resources and learning material along with the following when they first sign up:

- 3 × FX82AUPLUS calculators
- FX82AUPLUS Emulator software
- Teacher Book "How do I ...on a CASIO FX82AU plus"

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

	→		→		→		→		→	
	→		→		→		→		→	



- d. Classroom posters of the FX82AUPLUS calculator
- e. Teaching resources.

The website will be www.casio.edu.monacocorp.co.nz. The following is a general idea of what will be included:

- a. Full specifications on our range
- b. Worksheets for all models – especially the FX9750Gii
- c. Re-sellers of CASIO calculators
- d. FAQ's
- e. Online booking system for any workshops (Workshops we have listed or requesting a workshop).

Please visit the Casio NZ Education Website at www.casio.edu.monacocorp.co.nz

Brochure on the FX82AU: http://graphic-technologies.co.nz/doc/FX82AU_Brochure.pdf

Worksheets downloaded off the web.

Visit Monaco Corporation 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 and are designed primarily for the CASIO® FX82AU, FX9750Gii, FX9750G, FX9750G+, CFX9850GB, CFX9850GB+, CFX9850GC+, FX9750GA+ and FX9750Gii models of graphical calculators and the ALGEBRA 2.0.

There is also a variety of activity sheets designed for the ClassPad300, 300+, 330A and 330A+ 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.casio.edu.monacocorp.co.nz and <http://graphic-technologies.co.nz>.

Websites of interest...

For your mathematical enjoyment! Have you ever had students say to you, "I don't need math, I'm going to be a musician!" Why not introduce them to world-renowned drummer Ndugu Chancler, who explains why math is essential to music. http://www.thefutureschannel.com/dockets/realworld/the_rhythm_track/index.php

IXL's maths skills are aligned to the 2009 New Zealand National Standards, providing comprehensive coverage of maths concepts and applications. With IXL's national curriculum alignments, you can easily find unlimited practice problems specifically tailored to each learning objective. <http://nz.ixl.com/math/years>

Classpad update.



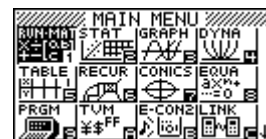
https://edu.casio.com/download_service/download/category.php

Some features of the FX9750Gii explored...

Volume of revolution

Select GRAPH mode and RUN mode from the main menu by using the arrow keys:

- to highlight the RUN icon or pressing 1.
- to highlight the GRAPH icon or pressing 5.



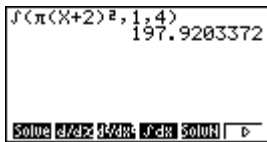
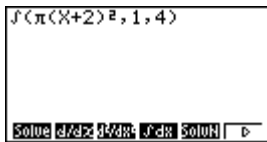
Volume of revolution $V = \int [f(x)]^2 dx$, where a and b are the lower and upper bound respectively.

N.B. To get the integration sign \int Press **OPTN** then F4 for **CALC** then F4 for the $\int (dx)$.

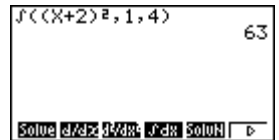
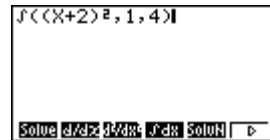


Example: Find the volume generated by revolving the line $y = x + 2$ about the x axis between $x = 1$ and $x = 4$.

Answer: Enter into the calculator $\int (\pi(x+2)^2, 1, 4)$ then press **EXE**.



The volume is 197.92 (2d.p.) units³ **OR** the volume is 63π (units³).



Example:

Find the volume generated by revolving the area between the line $y = x + 2$ and $y = x^2$ about the x axis.

Answer:

A picture of what is required is helpful here.

In **GRPH** Mode, Press **5** from the **MAIN MENU**

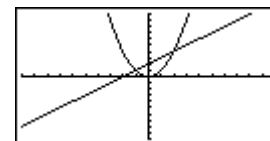
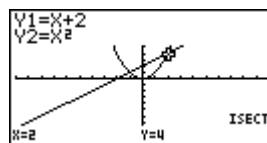
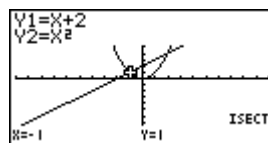
Enter into the calculator $y = x + 2$ and $y = x^2$ into the **Y1** and **Y2** spaces.



Set up the **V-Window** to a **STD** window, **[F3]**, then **[EXIT]**.

Draw the graphs of $y = x + 2$ and $y = x^2$ by pressing **F6** or the **EXE** key.

Now, a **G-SOLV**e, **SHIFT** **F5**, then **F5** to find the intersection points.

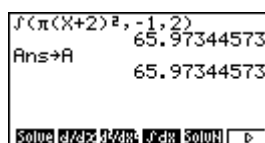
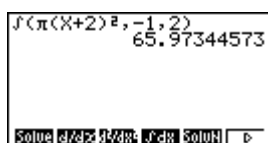
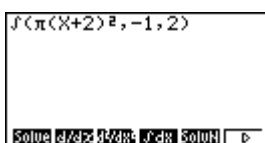


The intersection points are $(-1, 1)$ and $(2, 4)$.

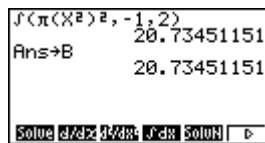
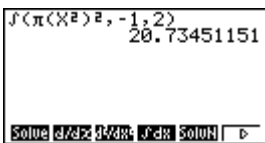
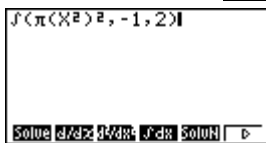
Once the intersection points have been found the volume of revolution formula can be used in **RUN Mode**, from the **Main Menu**.

The x-values are $x = -1$ and $x = 2$ for the lower and upper bound of the integration.

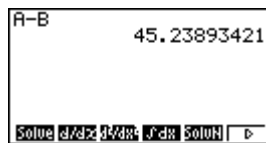
Enter in $\int (\pi(x+2)^2, -1, 2)$ then press **EXE** record the answer, by storing it in a memory space.



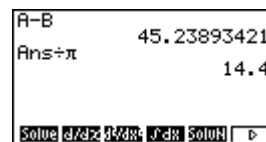
Enter in $\int (\pi(x^2)^2, -1, 2)$ then press **EXE** record the answer, by storing it in a memory space.



Calculate the answer A – B

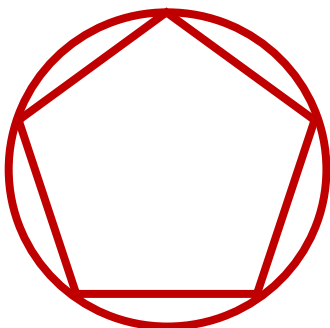


The volume generated is **45.239 (3 d.p.) units³** OR the volume is **14.4π (units³)**.



A geometrical problem to begin on!

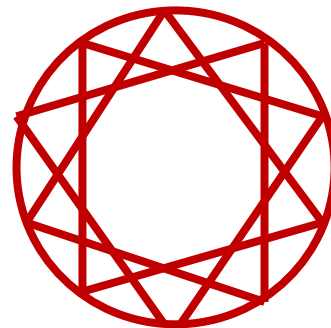
Star polygons are constructed by connecting evenly-spaced points placed on the circumference of the circle. The segments formed must all be the same size. If the chords formed do not cross each other, the figure formed is a regular polygon. If the segments cross each other, the polygon formed is called a **star polygon**.



$\left\{ \begin{matrix} 5 \\ 1 \end{matrix} \right\}$
Pentagon



$\left\{ \begin{matrix} 5 \\ 2 \end{matrix} \right\}$
Star polygon
Pentagon inside



$\left\{ \begin{matrix} 10 \\ 3 \end{matrix} \right\}$
Star polygon
Decagon inside

More on constructing and analysing **star polygons** based on the natural numbers and Fibonacci numbers 1, 1, 2, 3, 5, 8, 13, 21, ... see the activity sheet for the ClassPad300 enclosed with this mailout.

A last word!

Well again, that's all I can fit onto the 4 pages! Enjoy the term! Hope to see you at some workshops or hear from you 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.

Derek Smith
Graphic Technologies
73 Viewmont Drive
Lower Hutt

Phone: (04) 569 1686
Fax: (04) 569 1687
Mobile: 027 460 2871
Website: <http://graphic-technologies.co.nz>

*Would you like to receive
this mailout electronically?
Please email your request to:
graph.tech@xtra.co.nz*