

Create World 2012

5-7 December Griffith University Brisbane

Using Digital Resources for Teaching and Learning

Ro Bairstow King's College Mathematics





I will share ways in which the students use their iPads, the Apps of value and experiences gained in rolling out a BYOD iPad programme for students.

I will talk about my experiences with the creation of educational Apps and iBooks. I will also cover running e-learning courses, including delivering "live" online lessons with Blackboard Collaborate.

My Background

Teaching 35 years in New Zealand

Both State and Independent Schools

King's College, Auckland

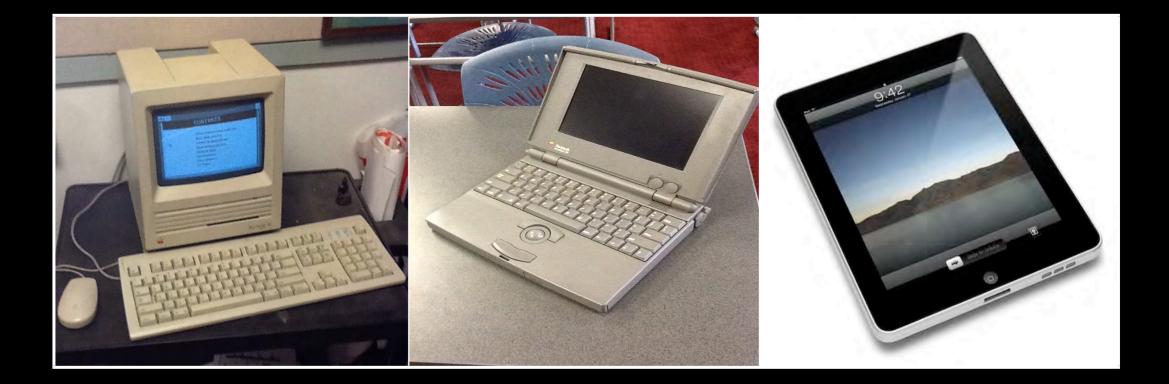
Independent school 750 boys, Years 9-13 200 girls, Years 12 and 13 Multi-national staff Superb lunches



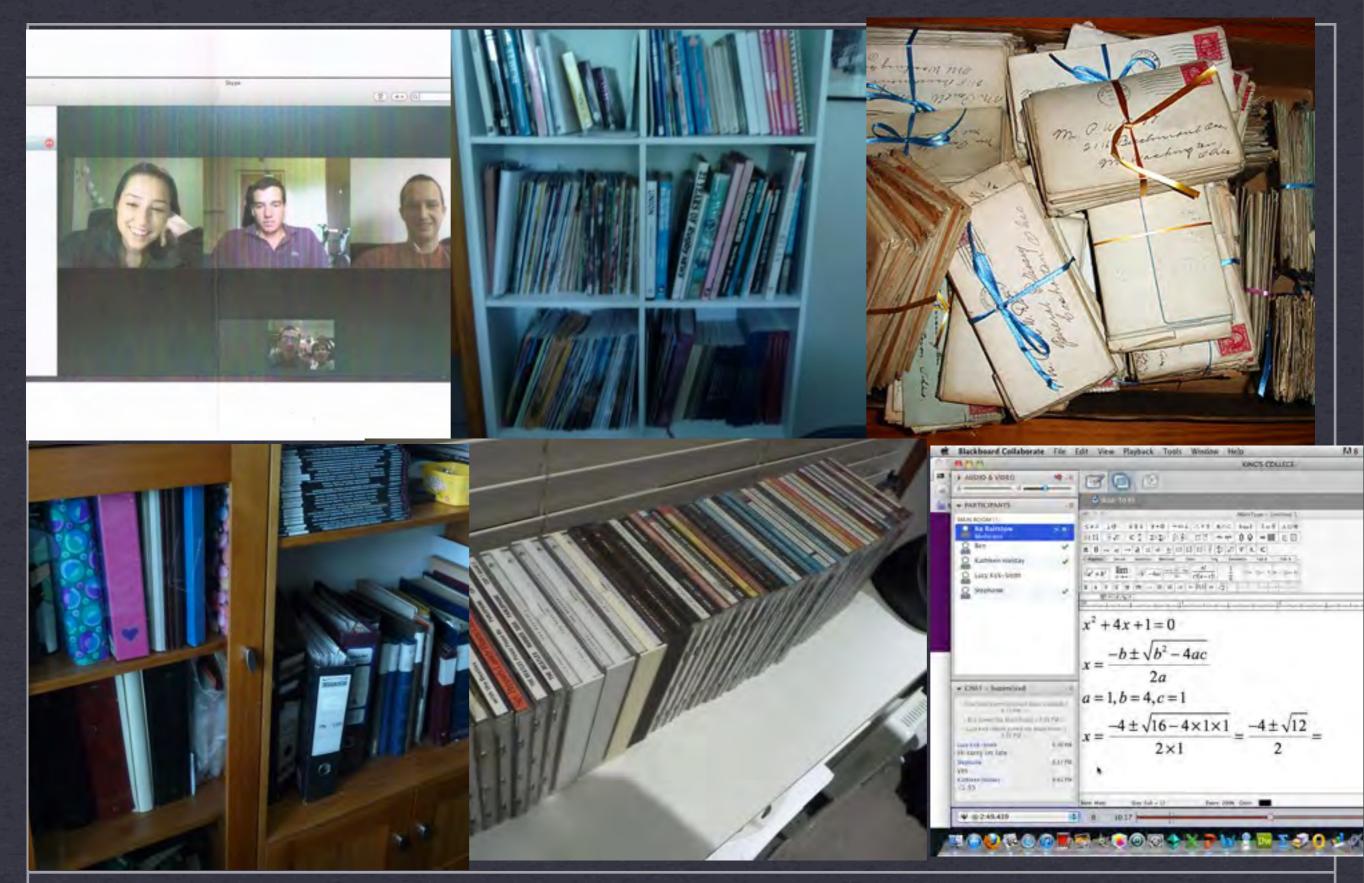
Written course materials in a range of media:

Text books Computer programs Websites Powerpoints Podcasts Apps Games iBooks

On a range of devices





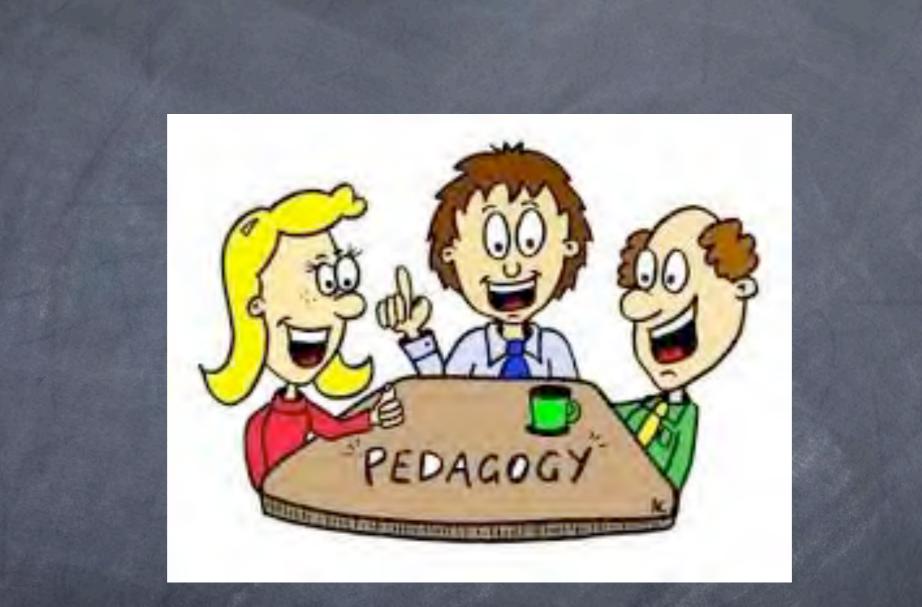


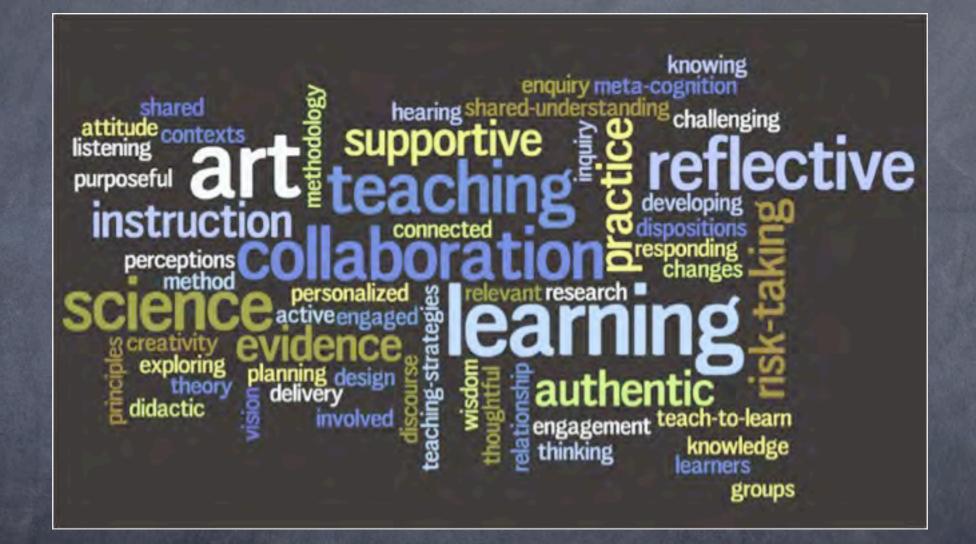
THE DIGITAL AGE THE WAY WE WERE TO WHERE WE ARE NOW

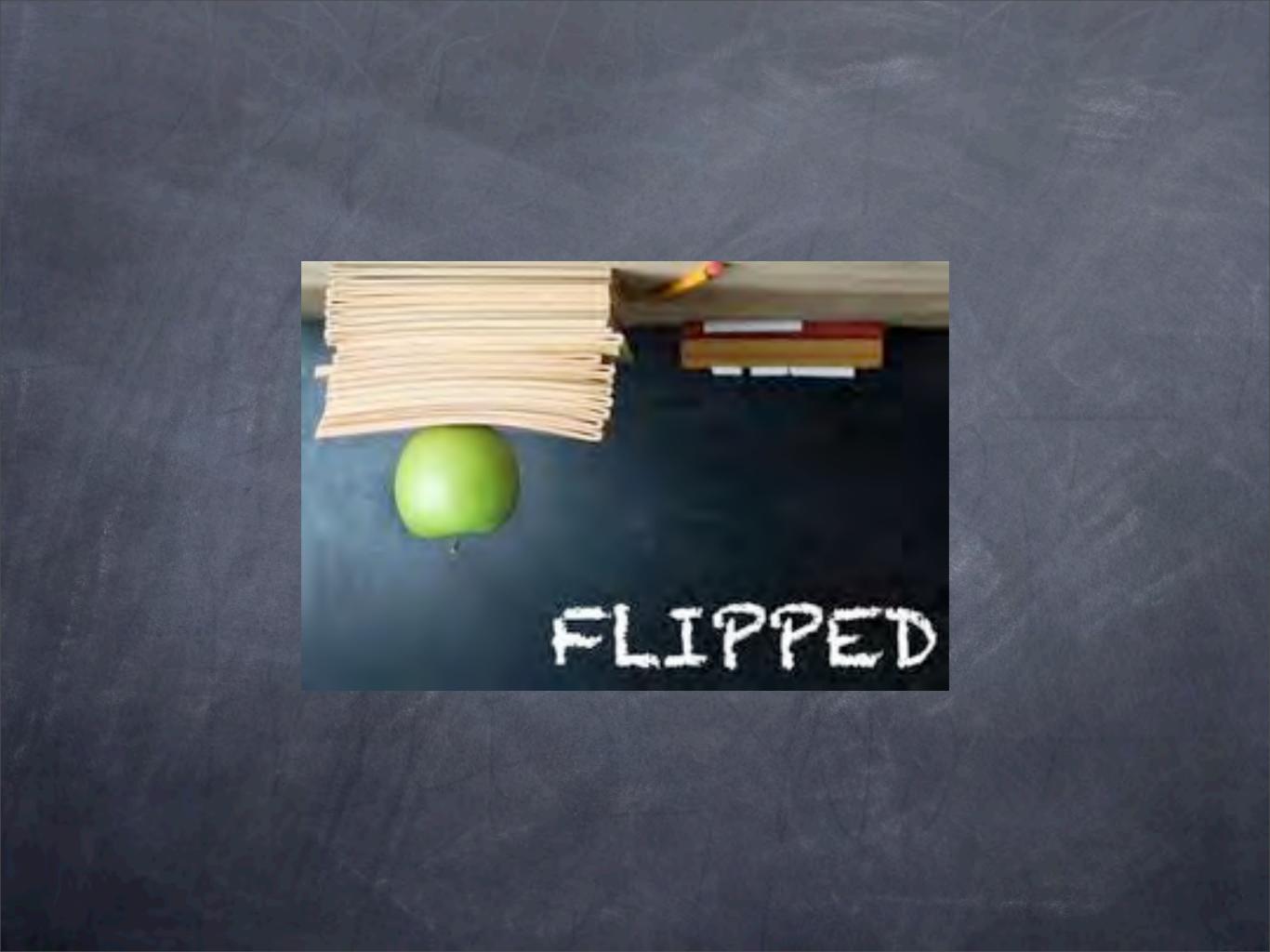




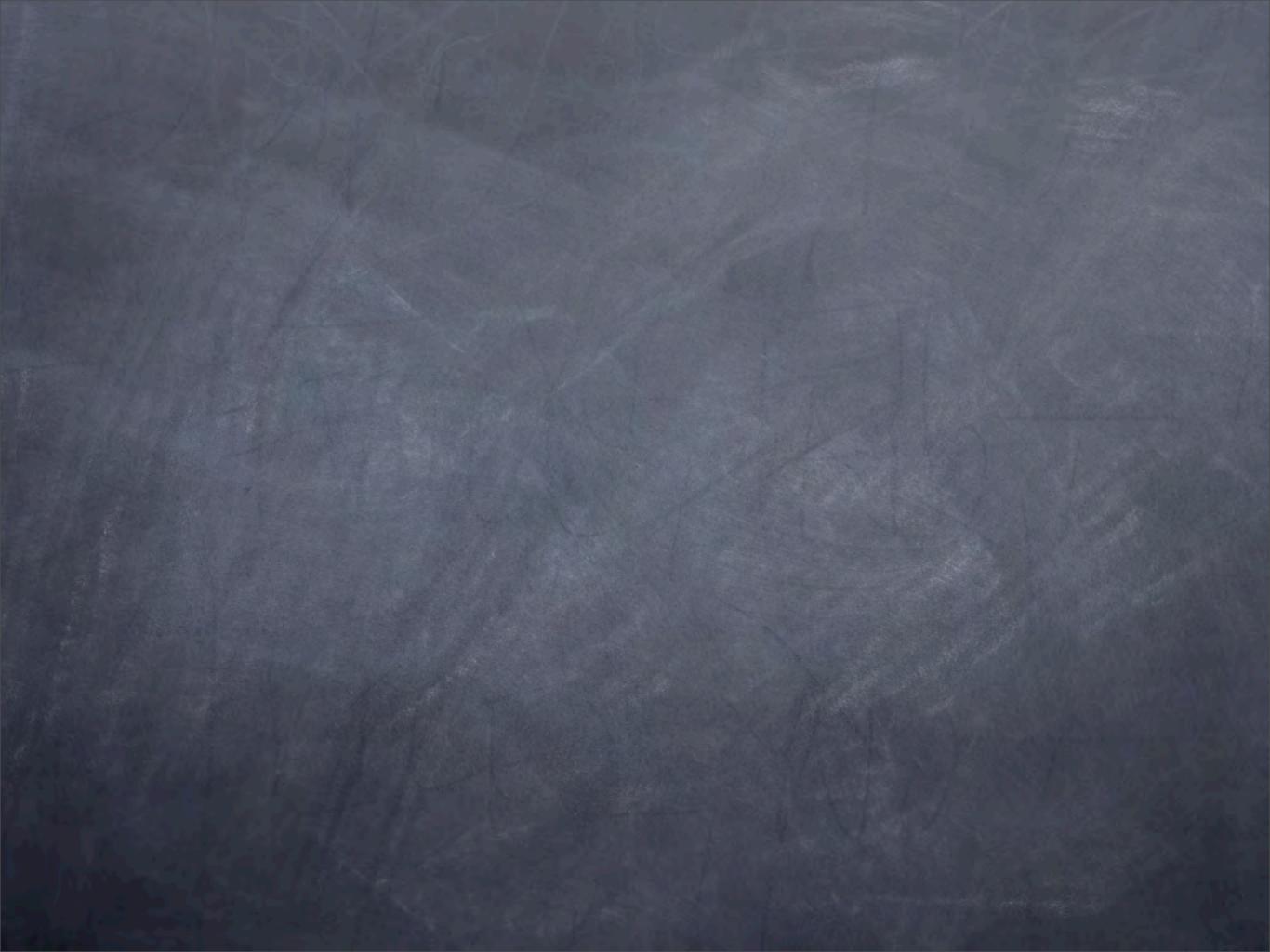
"If you always do what you always did, you always get what you always got!"











In a typical day I might teach three different types of class:

The traditional didactic method

iPad class

Remotely, on-line

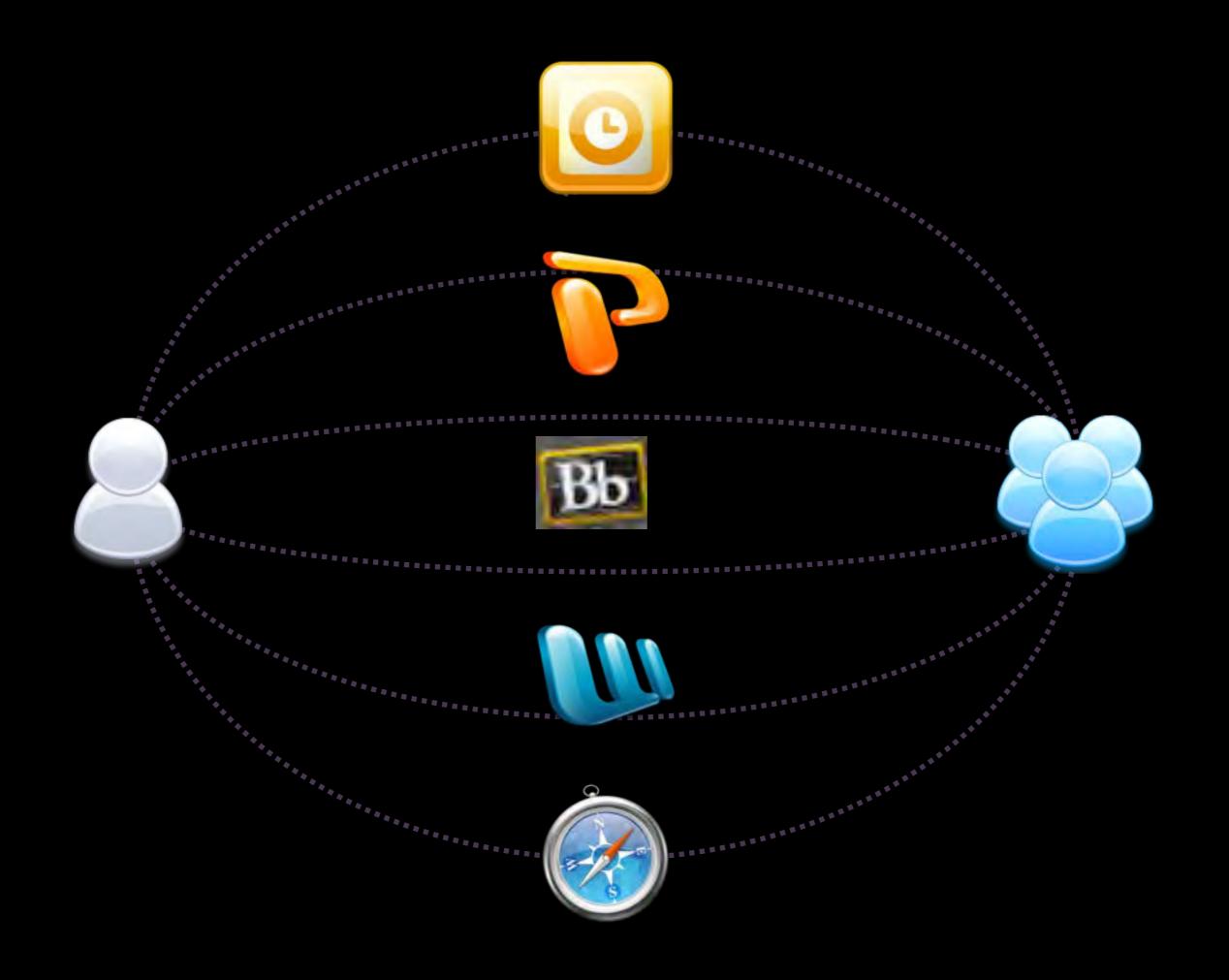
Intended to convey instruction and information as well as pleasure and entertainment

A teaching method that follows a consistent scientific approach or educational style to engage the student's mind.

When people are didactic, they're teaching or instructing. This word is often used negatively for when someone is acting too much like a teacher. King's College Online Mathematics Bridging Course



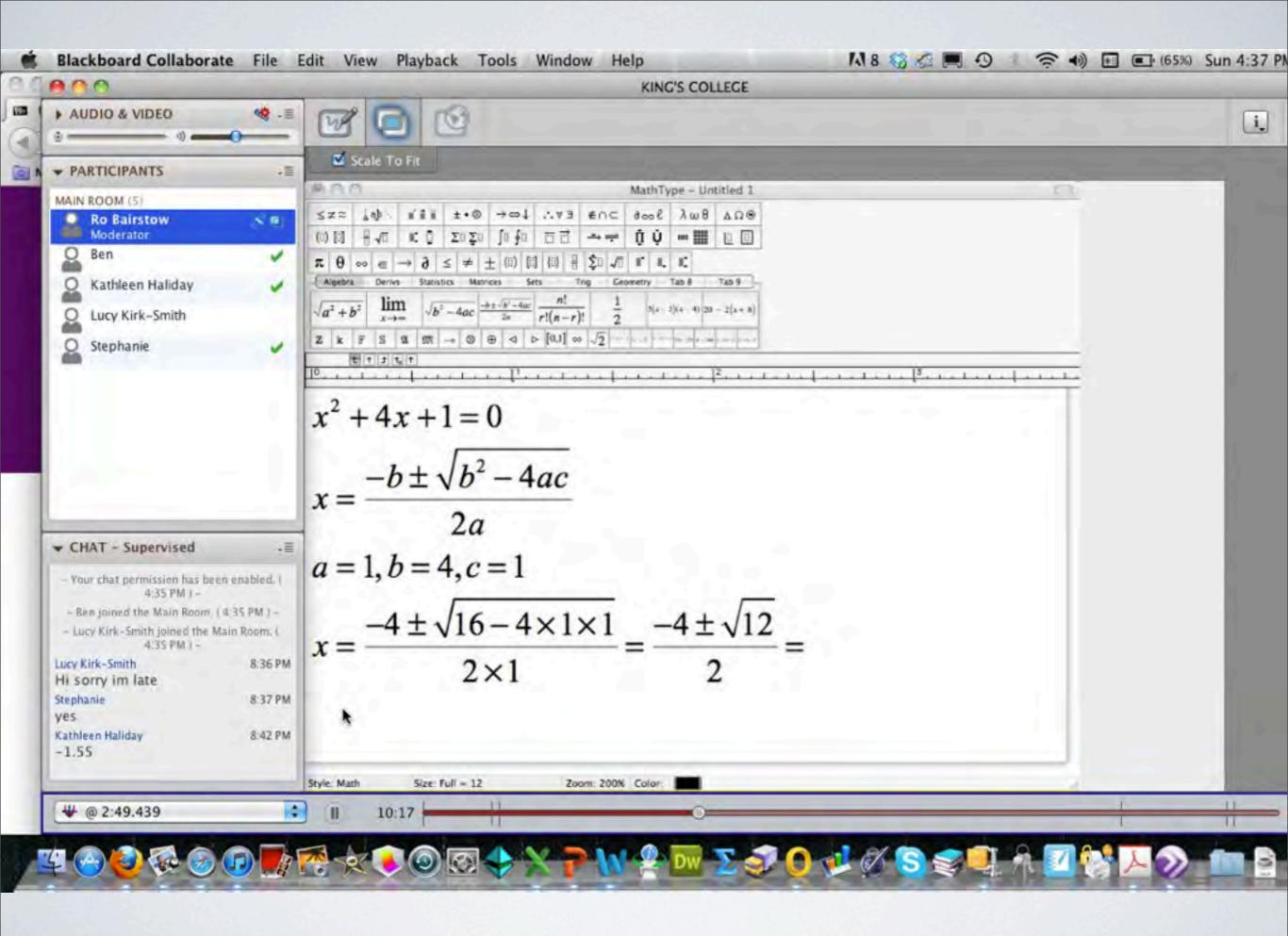


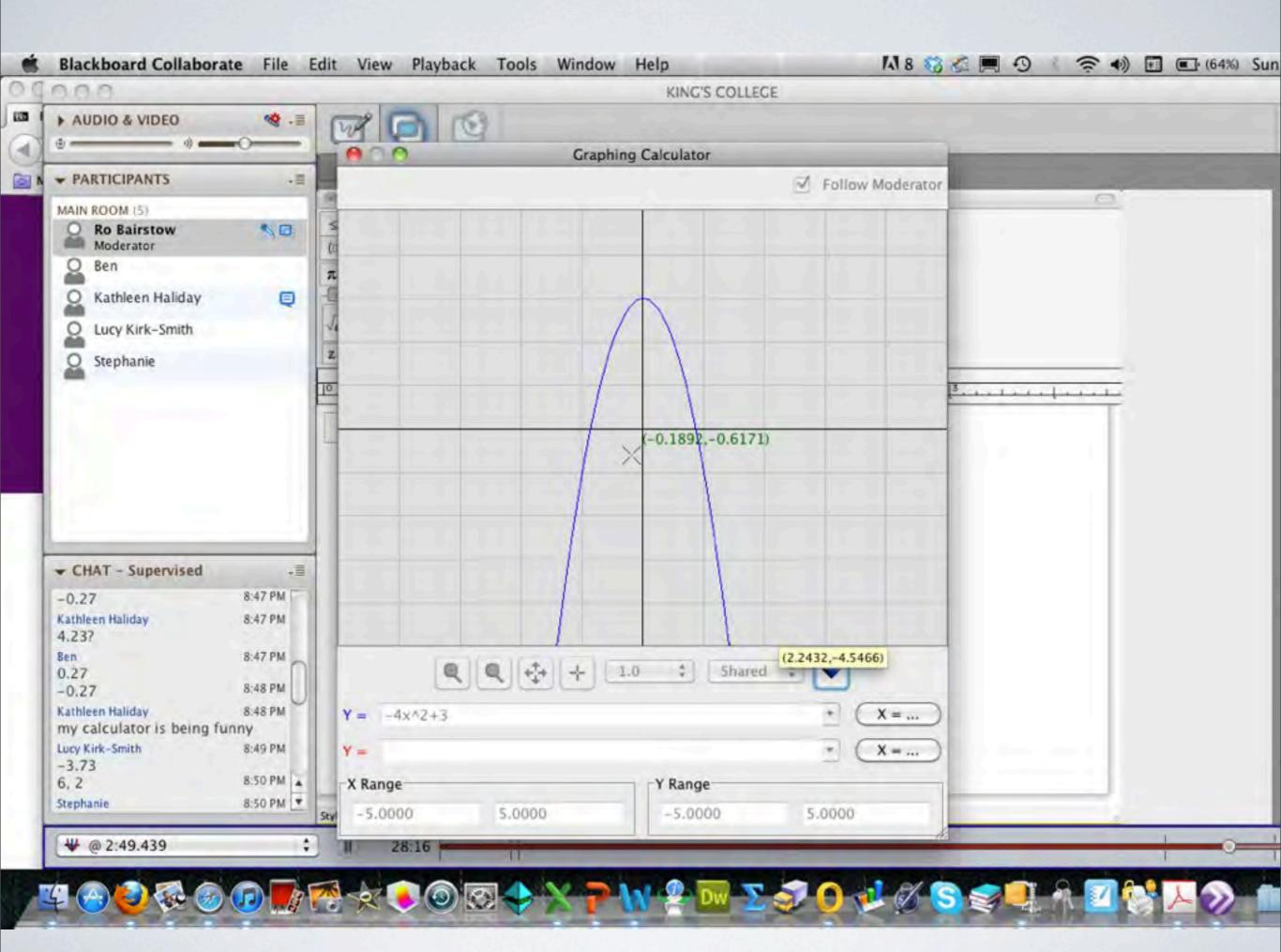


Each lesson may consist of the following:

Lesson Outline (a Word document) Lesson Details (a Powerpoint) Test (ScholarNet) Assessment (a Word document) Podcast On-line lesson

These files are sent to students via e-mail and are available on the Bridging Course website.





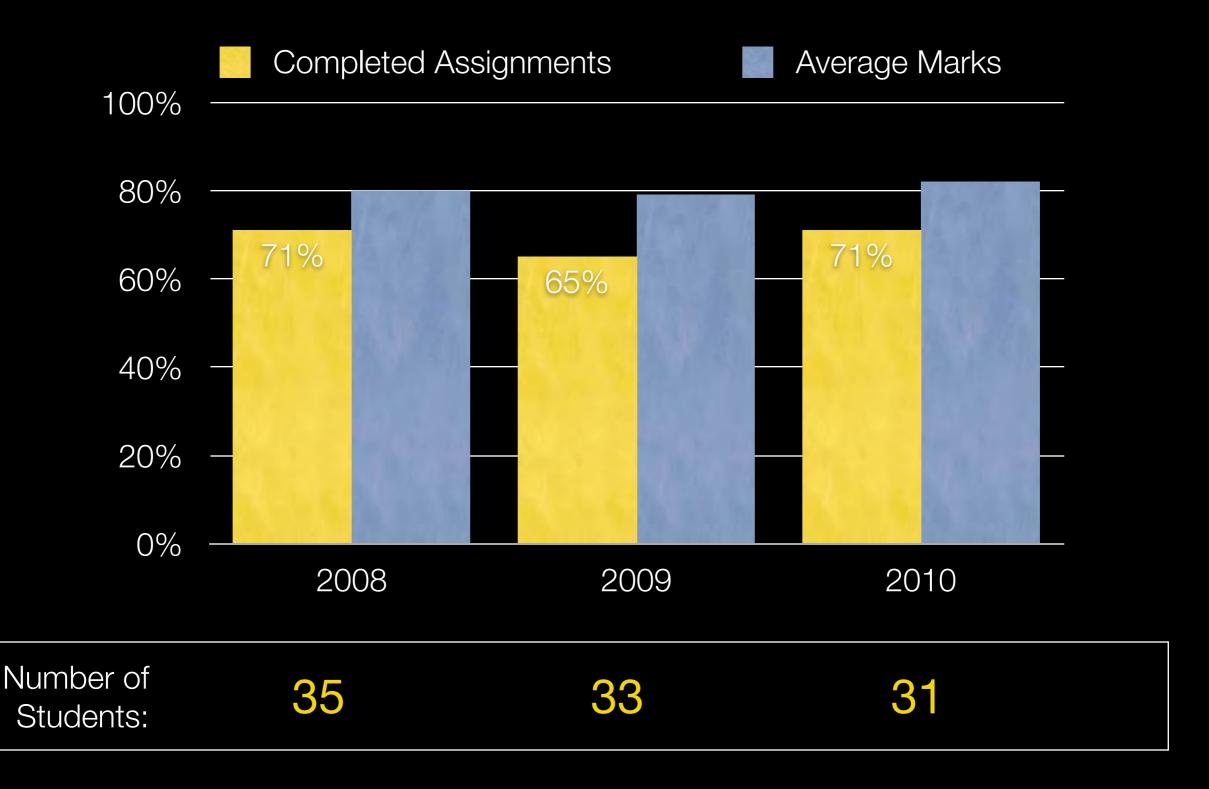
Why do it? Lots of people are doing it.

Homework, the Flipped classroom Catch-up sessions, the Khan Academy Distance/Industry learning Hobby courses Revision courses Tertiary courses



I could not connect. Sir, I cannot give you a good explanation, I'll admit, I forgot Then thought I needed a webcam and microphone to talk on a computer (which I didn't have). I was not able to use a computer. I did not have access to a computer My computer was getting repaired & Internet had some problems. I went on at 7:30 and nothing was there. My internet at home was down. I was quite busy on Tuesday and so forgot to attend the class. was busy doing the two tests and Latin revision. My computer was broken and won't be available till next month I did not attend because I had competitive swim training







Q- Google

Ċ

Reader

WELCOME TO THE MATHEMATICS BRIDGING COURSE 2011

Welcome to the Mathematics Bridging Course 2011.

My name is Ro Bairstow. If you want to know why I am able and qualified to teach you this course visit ABOUT ME.

This course is designed to cover some topics you may not have done in NCEA Level 1 and covers some topics in a bit more depth to prepare you for next year. It should also help with your current course.

I have split the course into 11 Topics which means one topic per week until the end of November. Click here for COURSE DETAILS

The website we will be using is:

Bridging Course Lesson Seven Simultaneous Equations

Aims

Content

Activities

Extra Notes

Assessment

Hints

Assessment

You can get Assessment Seven either:

- > As an attachment from your weekly e-mail
- > From the Blackboard website.

Show as much working as you can.

Please e-mail the solutions to me as a Word document by the evening of Thursday, 1 November.

Podcasts

A **podcast** is a digital file broadcast to people and played back on iPod, MP3-type player or computer. Podcasts can be just sound files. Enhanced podcasts can have sound, images and video.



- The Year 7 to Year 13 curriculum content website,
- At <u>www.scholarnet.co.nz</u>
- Contains notes, exercises, quizzes, tests, animations and much more.
- At least 50 topics for each year level (100 in Year 13).



Course Home

Year 10 (NZ Y11)

Year 11 (NZ Y12)



SENIORMATHSONLINE

Year 11 Topic List

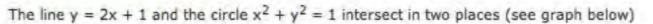
Course Home * Year 11 (NZ Y12) * Y11 Topic List

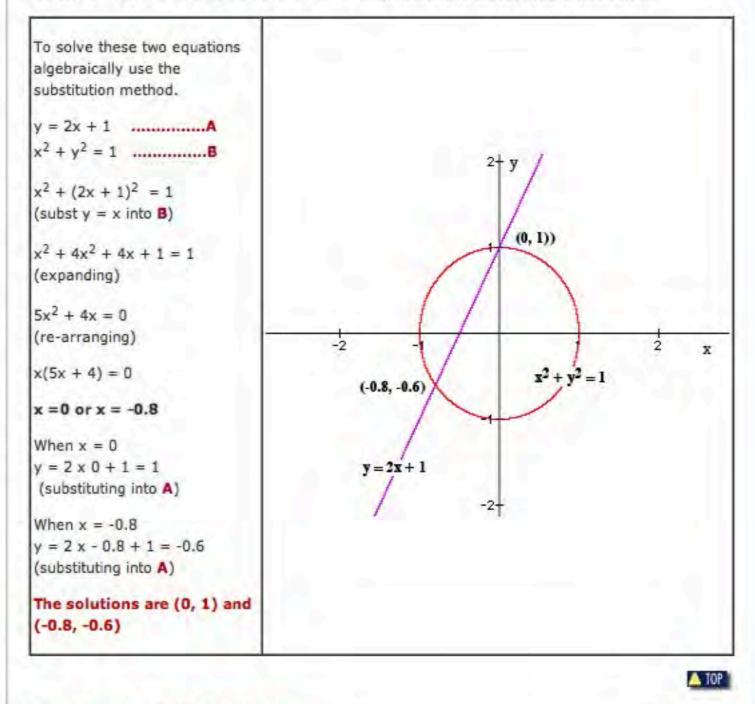
List of topics for Year 11

2	Expanding Brackets Factorising Expressions Exponents Algebraic Fractions Logarithms	20	Straight Line Graphs Quadratic Functions Cubic Graphs	36 37 38	Radian, Arcs and Sectors Trigonometric Ratios and Pythagoras' Theorem
3 4 5	Exponents Algebraic Fractions	21		-	Pythagoras' Theorem
4	Algebraic Fractions		Cubic Graphs	38	TA
5		22			Trigonometric Identitiesand Speci Triangles
	Logarithms		Circles	39	Non-right-angled Triangles
6		23	Hyperbolas	40	Trigonometric Graphs
	Linear Equations	24	Exponential Functions	41	Trigonometric Equations
7	Formulae	25	Logarithmic Functions	Sta	tistics
8	Quadratic Equations	26	Line between Two Points	42	Investigations
9	Nature of Roots	27	Equation of a Line	43	Statistical Graphs
10	Polynomials	28	Properties of Lines	44	Measures of Central Tendency
11	Simultaneous Equations	Ca	Iculus	45	Measures of Spread
12	Inequalities	29	Gradient of a Curve	46	Comparing Data
13	Sequences	30	Differentiation	47	Frequency
14	Arithmetic Sequences	31	Equation of Tangent	48	Time Series
15	Geometric Sequences	32	Stationary Points	49	Probability
16	Sigma Notation	33	Integration	50	Normal Distribution
17	Arithmetic Series	34	Area under a Curve	Ve	ctors
18	Geometric Series	35	Applications of Calculus	51	Vectors
				52	Three Dimensional Vectors
				53	Scalar Product and the Ratio Theorem
	10 11 12 13 14 15 16 17	10 Polynomials	10Polynomials2811Simultaneous EquationsCa12Inequalities2913Sequences3014Arithmetic Sequences3115Geometric Sequences3216Sigma Notation3317Arithmetic Series34	10Polynomials28Properties of Lines11Simultaneous EquationsCalculus12Inequalities29Gradient of a Curve13Sequences30Differentiation14Arithmetic Sequences31Equation of Tangent15Geometric Sequences32Stationary Points16Sigma Notation33Integration17Arithmetic Series34Area under a Curve	10 Polynomials 28 Properties of Lines 44 11 Simultaneous Equations Calculus 45 12 Inequalities 29 Gradient of a Curve 46 13 Sequences 30 Differentiation 47 14 Arithmetic Sequences 31 Equation of Tangent 48 15 Geometric Sequences 32 Stationary Points 49 16 Sigma Notation 33 Integration 50 17 Arithmetic Series 34 Area under a Curve Vertice 18 Geometric Series 35 Applications of Calculus 51 52

- Symbols
- Quiz
- Y11 Topic List

Linear equation and a Circle





Linear equation and a Hyperbola

The line 2x + y = 7 and the hyperbola xy = 5 intersect in two places (see graph below).

У

🛆 TOP

ScholarNET C

My Home Page 🚯 Logout

SENIORMATHSONLINE

Test

Year 10 (NZ Y11)

Course Home

Year 11 (NZ Y12)

Topics

Search

Glossary

Notes
Test

FAQ
Exercise
Answers

Summary

In this section:

Tests & Exams

Year 12 (NZ Y13)

Course Home » Year 11 (NZ Y12) » Topics » Algebra » T11 Sim. Equations » Test

Simultaneous Equations

Unit Test #11

Select your answers to the following 10 questions from the pop-up menus in the right hand column. When you are satisfied with your answers, fill in your name in the space provided below the test, and click the "**Submit Test**" button. Clicking the "Begin Test Again" button will clear all the answers.

Q1:	The point that lies on both the lines $3x + 4y = 18$ and $x - 4y = -10$ is	A. (6, 0) B. (2, -3) C. (4, 1.5) D. (2, 3)	Answer 1:	•
Q2:	What is the solution set for the following simultaneous equations $\gamma = 5$ and $x = -2$?	A. (5, -2) B. (-2, 5) C. (0, 5) D. (-2, 0)	Answer 2:	
Q3:	What is the solution set for the following simultaneous equations $y = 2x$ and $y = -2x$?	A. (0, 1) B. (1, 0) C. (0, 0) D. (-1, 1)	Answer 3:	4
Q4:	A point that lies on the graphs of both $x - y = 7$ and $xy = -12$	A. (4, -3) B. (2, -3) C. (4, -1.5) D. (2, 3)	Answer 4:	4
Q5:	Find the value of x and y which satisfies the simultaneous equations $2x + 3y = 0$ and $3x + 2y = 5$	A. (0, 4) B. (3, -2) C. (2, -3) D. (4, 0)	Answer 5:	+

ScholarNET.C			My Home Page 🚯 Logout				
		SENIORI					
Course Home Year 10 (NZ Y11)	Exercise Course Home * Year 11 (NZ Y12) * Topics * Algebra * T11 Sim. Equations * Exercise Simultaneous Equations Show all of your working. Give your solution in the form (x, y)						
Year 11 (NZ Y12) Topics							
Tests & Exams Year 12 (NZ Y13)							
Search)	 Solve each pair of sime method: 	ultaneous linear equations us	sing the most appropriate				
Glossary	a. $x + y = 4$ x - y = 2 d. $2y = 7 - 3x$ 3y = 2x + 4	b. $y + 2x = 7$ 4x - y = 11 e. $5y + 4x = 47$ y - 2x = -13	c. $y - 5x - 1 = 0$ y + 2x - 8 = 0 f. $7x - 5y = 45$ 2x + 3y = 4				
In this section: • Notes • Test • Summary • FAQ • Exercise • Answers	$\begin{array}{c} 3y = 2x + 4 \\ g, 3x - 4y = 7 \\ 2x - y = 3 \\ j, 3x + 6y = 18 \\ 5x - y = 8 \\ m, x - 3y = 2 \\ 2x + 3y = 7 \end{array}$	h. $y = -2x = -13$ h. $y = -2x + 7$ y = 4x - 11 k. $x = 3 + y$ 2x + 4y = 12 n. $3x - 4y = 19$ 2x + y = 9	i. $y + 6 = x$ 2y + 3 = x i. $y = x - 4$ 3x + 2y = 2 o. $y = 7x + 4$ y = 2x - 1				
	2. Solve the following pairs of simultaneous equations:						
	a. $y = x^2$ y = 5x - 4 d. $y = 2x - 3$	b. $y = x + 2$ $x^{2} + y^{2} = 10$ e. $xy = 6$	c. $x = y - 7$ xy = -12 f. $y = 2x^2 + 5x + 4$				
	$x^{2} + y^{2} = 9$ 9. $y = x^{2} - 7x + 18$	y = x - 5 h. $x^2 + y^2 = 13$	y - 2x - 3 = 0 i. $y = \frac{8}{2}$				
	y = 3x - 7 j. $x = y - 3$ $y = \frac{-1}{x - 1}$	y = x + 1 k. $8 - 3x + 2y = 0$ $y^2 = 3x$	y = x - 2 1. $y = 24 + 2x - x^2$ y = 12 - 2x				
	For each of the following word problems, write a pair of simultaneous equations and then solve them before writing your answer as a statement.						
	 Six pies and sixteen cokes cost \$44, and two pies and four cokes cost \$12. What is the cost of: (a) One pie (b) One coke 						
	 4. The cost of developing 20 large photographs and 24 small photographs is \$232. Twelve large photographs and 32 small photographs cost \$192. What would be the cost of developing: (a) One large photograph (b) One small photograph 						
1 5 3 5 1	5. Five CDs and two tape						

ScholarNET C					*	My Home Page 🔅 Log
				SENIORM	AT	
Course Home Year 10 (NZ Y11)	Answers Course Home	» Year 11 (NZ Y1	2) » 1	Fopics » Algebra » T	r11 S	im. Equations » Answer
Year 11 (NZ Y12)	Simul	taneous	Ea	uations	_	
Topics Tests & Exams Year 12 (NZ Y13)	1 a. d.	(3, 1) (1, 2)	b. e.	(3, 1) (8, 3)	f,	(1, 6) (5, -2) (9, 3)
Glossery	j.	(2, 2) (3, 1/3)	k.	(4, 1)	L	(2, -2) (-1, -3)
In this section: • Notes • Test • Summary • FAQ • Exercise • Answers	d. 9.	(4, 16) and (1, 1) (0, -3) and (12/5, 9/5) (5, 8) (-2, 1)	e. h.	(-3, -1) and (1, 3) (6, 1) and (-1, - 6) (-3, -2) and (2, 3) (16/3, 4) and (4/3, -2)	f. i.	(-4, 3) and (-3, 4) (-1/2, 2) and (-1, 1) (4, 2) and (-2, -4) (6, 0) and (-2, 16)
	4. A small pl 5. Three CD 6. The two n 7. A crayfish 8. A kg of ba 9. The two n	s and four tapes co numbers are 38 an costs \$24.	3 and ost \$1 od 74. nd a k	a large photograph 168. iwifruit costs 50 cer		\$8.

ScholarNET C

My Home Page 🚯 Logout

SENIORMATHSONLINE

Course Home

Year 10 (NZ Y11)

Year 11 (NZ Y12)

Year 12 (NZ Y13)

Search

Glossary

In this section: • Investigations • Formulae • Symbols • Quiz

• Y11 Topic List



Year 11 Quiz

Course Home » Year 11 (NZ Y12) » Quiz

Click on the question you wish to answer, in any order. The questions in RED are about TRIGONOMETRY. The questions in BLUE are about GEOMETRY AND GRAPHS. The questions in GREEN are about ALGEBRA. The questions in BROWN are about CALCULUS. The questions in PURPLE are about PROBABILITY AND STATISTICS.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

If you need help on a particular question, click on the HINT button.

© 2011 ScholarNET Terms of Use | Privacy Statement



Random Student Comments

"Downloading it was really good, I actually preferred it to normal classes!

"I found it really great being able to work at my own pace, and everything was really selfexplanatory."

"The biggest problems I encountered would have to be confusion over questions and skills, and being unable to talk it through with someone in person."

"I found the course was well-organised, it was good having it all on-line, which made it easy to contact you with problems and questions."

Student Problems

Downloading assessments and lessons but I think it was our computer more than anything else.

Trying to manage the extra work with exams and work.

The emails with all of the attachments were really large and so took up most of the space on my email account.

I found it difficult to type in some of my answers for assessments into the computer, because I had no idea how to use the Equation Editor program.

Advice for Teachers

Make sure you get clear e-mail addresses that students use regularly (preferably no hotmail addresses).

Make passwords and usernames to websites clear and easy to remember.

Encourage them to use Equation Editor and to format answers mathematically.

Prepare model answers to save having to write too many corrections.

To summarise

There is a need to be digitally well-organised \checkmark \checkmark The work-load is high You have to cover all types of hardware/software Be aware of different levels of student ICT expertise \checkmark It is easy for students to fall by the wayside \checkmark \checkmark It's fun and a bit different and generally students seem to like it.



King's College IPad Trial Second Year 2013

Next year two Year 9 classes, a top stream and a middle stream class and two Year 10 classes will be asked to bring an iPad to school.

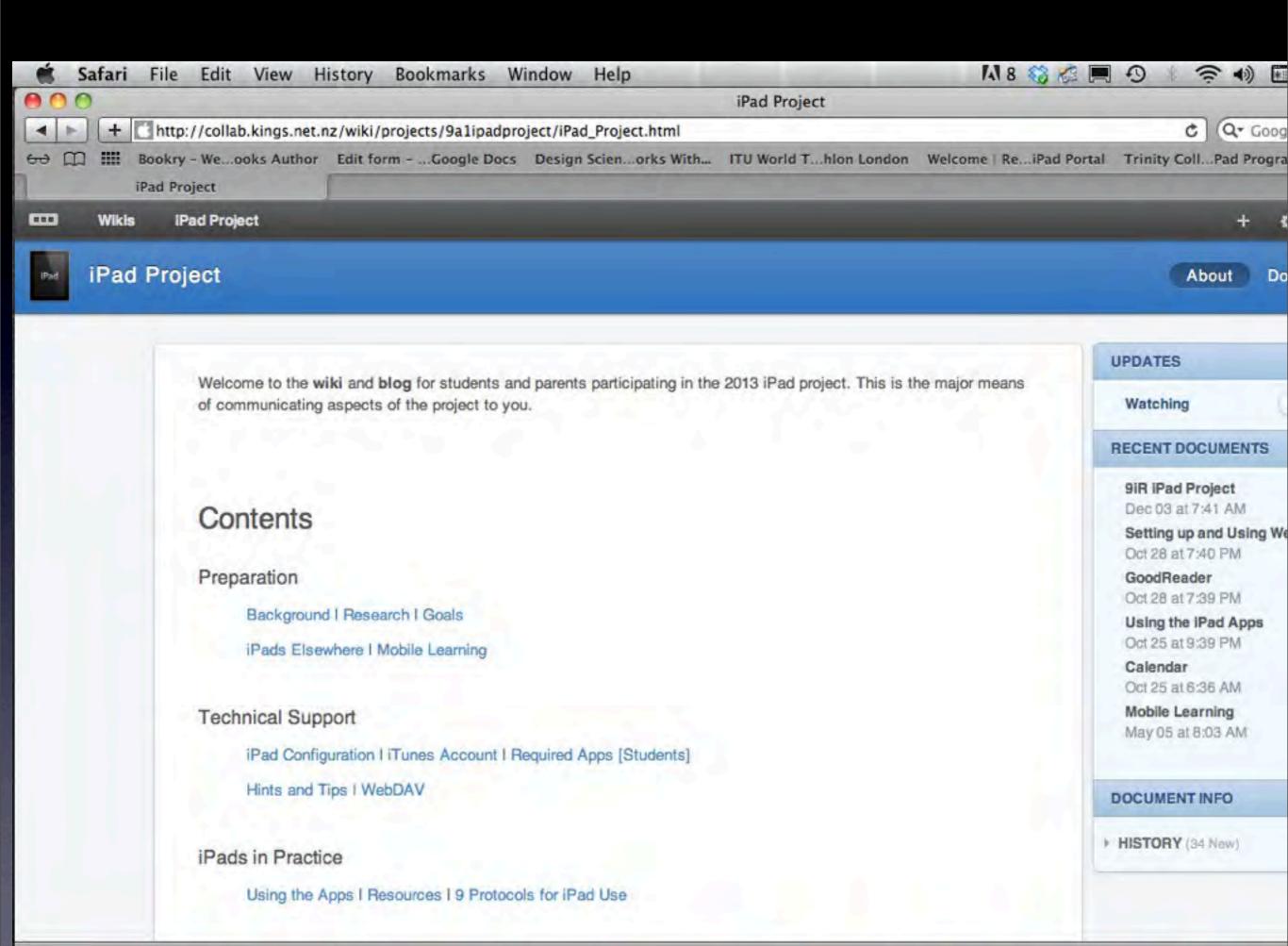




Dr Ruben Puentedur	a – <mark>SAMR</mark> model	(2011)	
ENHANCEMENT	Technology used to do things more efficiently (productivity).	Substitution	Technology acts as a direct tool substitute with no functional change or improvement.
		Augmentation	Technology acts as a direct tool substitute with functional improvement.
TRANSFORMATION	Technology used to extend the <i>reach</i> of teaching and learning or the task.	Modification	Technology allows for significant task <i>redesign</i> .
	Technology used as a transformational device	Redefinition	Technology allows for creation of new tasks previously inconceivable.

Impacts of ICT on Teaching and Learning

Investigating reality and building knowledge Promote active learning and authentic assessment Engage students by motivation and challenge Provide tools to increase student productivity Provide scaffolding to support higher level thinking Increase learner independence Promote collaborative and co-operative learning Tailoring learning to the learner overcome physical disabilities





9 IPAD PROTOCOLS

1. Be organised:

1.1. When sending documents to teachers or handing in work, name the document as follows:

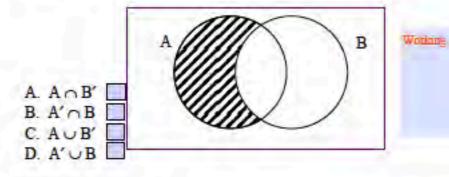
Surname_Name of work.pdf [e.g. Smith_Caecilius Exercises.pdf]

- Send files as PDF files unless instructed otherwise. Google limits mail attachments to 25MB.
- Create subject folders in each of the productivity apps and file your work appropriately.
- 2. Be careful: back up to iCloud regularly (at least every day).
- Be sensible: do not carry the iPads in your hand or use them during the school day between lessons: keep them securely in your bag and never leave your iPad unattended.
- Be responsible: do not lend your iPad to another person or allow anyone to access your iPad, and keep your Passcode and KCUsers password secret.
- 5. Be proactive: when your teacher instructs you to put "Lids on," do so immediately.
- 6. Be on task: playing games or visiting social sites such as Facebook in class or between classes is inappropriate use, unless you've been specifically instructed to do so by your teacher. Similarly, using Messages, FaceTime or the camera in class or prep time is inappropriate use, unless you've been specifically instructed to do so by your teacher.
- Be original: do not plagiarise, either from another student or from the internet. Although it is
 easier when using computers, it is much more obvious to spot. You will get caught

Section 1 Basic Number Theory

Question 1.1 Types	of numbers
Write 17 370 000 in	standard form.
A. 1.737 x 10 ⁻⁷	
B. 1.737 x 10 ⁶	
C. 1.737 x 10 ⁻⁶	
D. 1.737 x 10 ⁷	

Question 1.2 Venn Diagrams Which expression shows the shaded region?



Question 1.3 Integers

During one week in August at Milford Sound, New Zealand, the daily minimum temperatures were:

Working

-3°C	0°C	-1°C	~2°C	-2°C	-6°C	1°C
Which is the lo	west of these te	emperatures?				
0%			The define			

A.UC	
B6°C	
C1°C	
D. 1°C	

Question 1.4 Proportion

Eva changed 500 dollars (\$) into pounds (£) when the exchange rate was 1 = £0.55. She later changed all the pounds back into dollars when the exchange rate was 1 = £0.75.

Algebra Revision

These are the type of questions that more than 40% of you got wrong in the recent algebra tests. FIND OUT HOW and GET THEM RIGHT!

Before you begin *

Type in your e-mail address AND your name

Question 1*

Simplify 5p/8 x 2p/15

Question 2 * Expand and simplify 5q(3q + 4) - 4q(2q - 3)

Question 3 * Factorise p^2 - 6p - 7

	0							9	iR Algebra	Test 1				
-	+ https://	docs.goog	le.com	/spread	lsheet/c	cc?key	=0All	D7flJaOf	XdDU5aVB2	UGVsRnFudG1nM	MnJDSW8yZmc#	gid=0 C	Q+ Google	
60 [Bookry - W	eooks Au	thor	Edit for	rmG	oogle [Docs	Design	Scienorks	With ITU Wor	ld Thlon Lond	on Welcome	ReiPad Portal	1
	9iR Algebra Te		I					-						
				10 Mar										
		ant 1	1. 6											Ro Bairstow -
	9iR Algebra T	esti	1.0										Comments	Share
	File Edit View	Insert F	ormat	Data	Tools	Form	(30)	Help	All chang	ges saved in Driv	ve:			
							-	-						
	2002	\$ % 123	3 - 10	Opt -	B Abc	A -	/A1 -	⊞ *	三 * 199 *	🚍 Σ - 🛄	Y			
fx	Timestamp													
-	A	В		С	D	E	F	G	н		J	к	L	м
	F			-	Questi	Ques	Que	Questio	Question	Least and Sta		(2) (2) (S)		and the second second
1	Timestamp	Questio	on 1		2	3	4	5	6	Question 7	Question 7	Question 8	Question 9	Question 10
2	6/4/2012 22:24:20	Mr Bain	stow	12	4x	0	1	4x^2	2x^2 - 6x	3x^2(1 - 2x)	3xz^2	x^2 + 3x - 10	9x^2 - 24x + 16	x^3 + 2x^2 - 15x
3	6/4/2012 22:31:51	Aloy (0	11	4x	0	1	4x^2	2x^2-6x	-3x^2(2x-1)	3x^3y^2z^2	x^2+3x-10	9x^2-24x+16	x^3+2x^2-15x
4	6/4/2012 22:33:22	S	а	12	4x	0	1	4x^2	2x^2-6x	3x^2(1-2x)	3xz^2	x^2+3x-10	9x^2-24x+16	x^3+2x^2-15x
5	6/4/2012 21:00:20			6	4x	0	1	4x^2	2x*2-12x	3x^2(2x)	3xz^2	x^2+3x-10	(3x-4)(3x-4).	No time
6	6/4/2012 22:56:39			11	4x	0	1	4x^2	2 x^2-6 x	-3 x^2 (2 x-1)	3xz^2	x*2-7x-10	9x^2-24x+16	x^3+2 x^2-15x
7		Ke	F									-	Burnel and the	
-	6/4/2012 23:10:37			11	4x	0	1	4x^2	2x^2-6x	3x^2(1-2x)	3xz^2	x^2 + 3x - 10	STR STR	
8	6/4/2012 23:12:18	G		9	4x	0	1	4x^2	2x^2-6x	3x^2(1-2x)	3xy/2	X^2+3x-10	9x*2+16	X^3+2x^2-15x
9	6/4/2012 23:59:36	0		10	4x	0	1	4x^2	2x^2-6x	3x(x-2x*2)	3xz^2	x^2+3x-10	9x*2-16x+18	x^3 +2x^2-15x
-		1.0		17.57	<							x^2+5x-2x-		1000 BU TH 10
10	6/5/2012 0:10:27	1		8	4x	0		4x^2	2x^2-6x	3x(x-2x*2)	3xz^2	10= x^2+3x- 10	9x^2-16	x(x*2+5x-3x-13) x*3+2x*2-13x
	0/0/2012 0.10.21	-		0	44	0	-	44 2	24 2-04	JANNAR CI	JAL L	10	(3x-4)(3x-4) =	x(x^2+2x-15) =
11	6/5/2012 0:14:10	м	Y	10	4x	0	1	4x^2	2x^2-6x	3x^2(1-2x)	3xz^2	x^2+3x-10	9x*2-16	x^3+2x^2-15x
40													12x*2 - 24x +	
12	6/5/2012 0:15:39	W	ər	8	4x	0	1	4x^2	2x^2 - 6x	3x*2(1-x)	3x2/ý	x^2 + 3x - 10		x^3 + 2x^2 - 15x
13				12.51	2.0				1000					X^3-3x*2+5x*2-
1.10	6/5/2012 0:16:40	В	1	6	4x	0x	1	4x^2	2x*2-6	-3x*-1	3xz^2	X^2+3x-10	6x*2-24x+16	15
14	6/5/2012 0:24:24	Ala	w	9	4x	0	1	4x^2	2x^2 - 6x	3x(x - 2x*2)	12xz/4 = 3xz	x^2 + 3x - 7	9x^2 - 24x + 16	x^3 + 2x^2 - 15x
15	6/5/2012 0:35:01	M	-	7	4x	0	1	4x^2	2x^26x	3x^2(1-2x)	3xyz^2	X^2+3x-10	9x12-24x-16	x*3+8x*2-15
	0/0/2012 0:00.01			-	-	0	1	44 2	24.2.04	SA Z(TZA)	onge e	A 210A-10	ON F.F.W. 10	x*23x*2-5x*2
16				loľ	1.1.1				2x*26x			**22x-5x-3	9*212x12x	2x and x*2-2x*2
	6/5/2012 0:56:16	1		5	4x	0	1	4x^2	and -4x	71777	3x2/1	and x^2-3x-3	and 9^2	2X

60 [Algebra			for Edit formGo	ogle Docs Design S	cienorks With ITU	J World Thlon Lor	ndon Welcome Re	iPad Portal	
	Algebra F		sion insert For	mat Data Tools	Form (28) Help	All changes saved i	n Drive		Comments	Rol
fx	Timestamp	7	\$ % 123	- 10pt - B Abc	<u>A</u> - <u>M</u> - <u>H</u> - <u>I</u>	Ε • [10] • 🚍 Σ •	<u>[u]</u> 7			
	A	в	с	D	E	F	G	Н		1
1	Timestamp			Before you be	gin Question 1	Question 2	Question 3	Question 4	Question 5	
2	10/23/2012 15:39:24	7	0	ro	p^2/12	7q^2+ 32q	(p - 7)(p + 1)	q=7/8	z = 9	m =
3	10/23/2012 20:34:37	6	5	9-r Ge	p^2/12	7q^2 + 32q	(p - 7)(p + 1)	q = 7/8	z = 3	m
4	10/23/2012 20:35:30	6	4	M. till(Ke	ax P/4 x p/3 = p^2/12	15q^2 + 20q - 8q^2 + 12q =7q^2 + 32q	(P - 7) (p + 1)	24q = 21 q = 21/24	2z = 18 z = 9	(m m :
5	10/23/2012 20:38:25	7	4	h.c He	z p^2 / 12	7q^2 + 32q	(q - 7)(q + 1)	q = 0.875	z = 9	(m m
6	10/23/2012 20:42:27	6	4	j.v.	nz p^2/12	7q^2+32q	(p-7)(p+1)	7/8/2012	Z=9	m=
7	10/23/2012 21:03:43	6	4	Ale a.c	p^2/12	7q^2+32q	(p-7)(p+1)	q=21/24	z=9	(m- m= OR m=
8	10/23/2012 22:12:57	7	0	S.C	t.n p^2/12	15q^2 + 20q - 8q^2 + 12q 7q^2 + 32q	(p - 7) (p + 1)	q = 7/8	z = 9	(m m :
9	10/23/2012 22:23:32	7	0	del De	om = 10p^2/120 = p^2/12	= 15q^2 + 20q - 8q^2 + 12q = 7q^2 + 32q	= (p + 1)(p - 7)	24q = 21 ∴ q = 7/8	7z - 5z = 12 + 6 2z = 18 ∴ z = 9	(m .: r
10	10/23/2012 23-13-37	6	6	h.v Ha	n^2 / 12	70^2 + 320	(P+1) (P-7)	0 = 7/8	7 = 9	a.

Open "https://docs.google.com/spreadsheet/ccc?key=0AlLD7flJaOfXdHdpVERSTTBWUVpSMUhIOWRsUHVkQWc" in a new window

2

+ https://docs.google.com/spreadsheet/viewform?formkey=dHlfNGpfdk1fVXZqa3N1ejhMWmRSWEE6MQ#gid=0 C Q+ (Google
-> CO IIII Pookmy We aske Author Edit form Coogle Door Decise Scien aske With ITU World T. Mondon Welcome J. Po. iD	
9iR Revision Questionnaire	iPad Portal

9iR Revision Questionnaire

Fill in these questions to help me organise your revision programme. Use this list to select the 3 topics most in need of revision for you.

Prime Factors, Standard form, Significant figures, Ratios, Fractions, Decimals, Percentages, Linear Equations, Expanding, Factorising Quadratics, Common Factors, Quadratic Equations, Straight line Graphs, Pythagoras Theorem, Trigonometry, Probability, Tree diagrams, Area of shapes, Volume of objects, Metric Units, Geometry. Any other topic please type in. * Required

2 *		
Revision Need 1		
3 * Revision Need 2		
4 *		
Revision Need 3		
-	_	

5*

Why did you not attend the On-line Revision Class on Tuesday evening at 8.30pm?

The Basic Apps Books

General Apps

Pages (word processing) Numbers (spreadsheet) Keynote (presentation) Remarks (PDF reader / note taking) Adobe Reader

Maths Apps

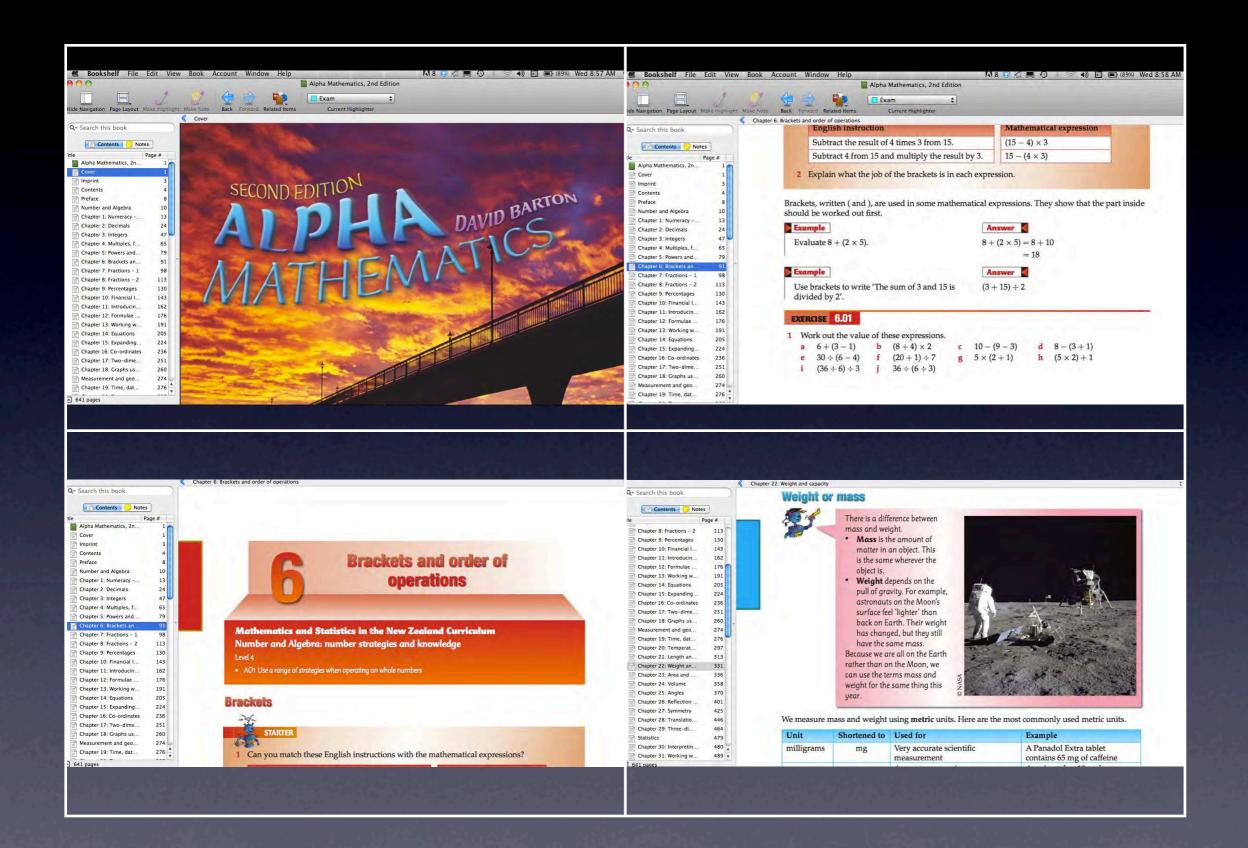
Math! (Your Teacher) Quick Graph (graphing calculator) Maths Flyer Wolfram Alpha IGCSE Tester *Maths365* Pearson's Barton Series

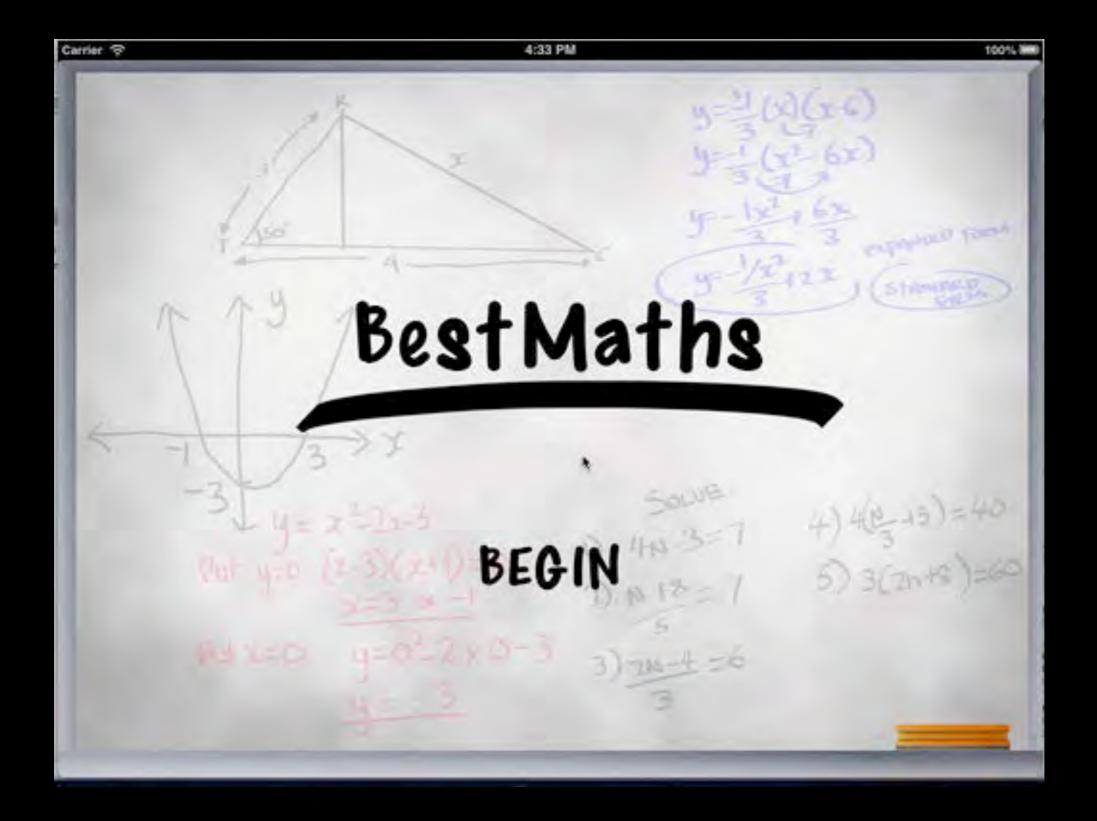
BestMaths Series (IGCSE)

Basic Number Theory General Geometry Measurement and Trigonometry Algebra and Equations Functions and Graphs Probability and Statistics Transformation Geometry, Matrices and Vectors

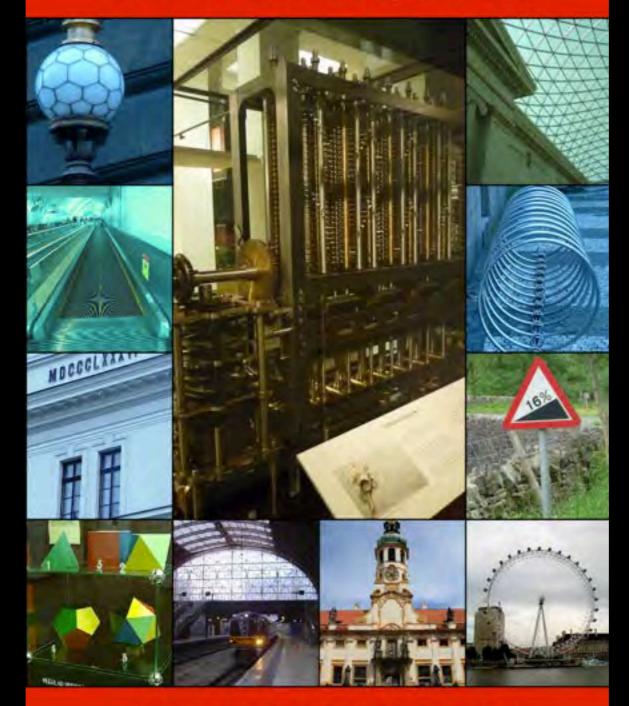
Games

BestMaths Series (All courses - iPad /iPhone) Number Nightmare Multiple Madness Siggy Figgy Silly Circles Get Set Trig Terror Stunning Stats



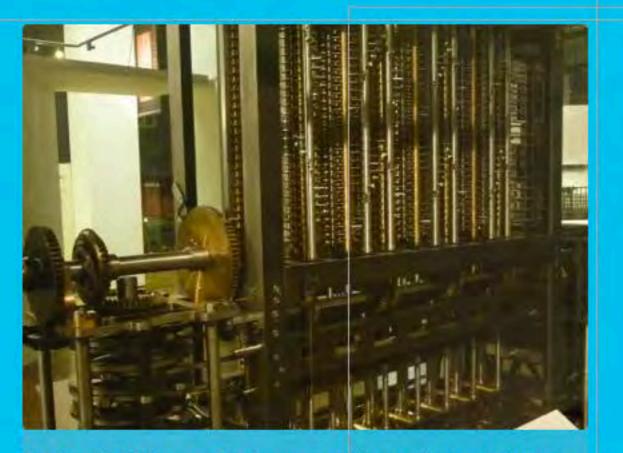


Basic Number Theory and Sets



BestMaths IGCSE (Extended)

Basic Number Theory



Babbage's Difference Engine - one of the earliest calculators.

Section 1.1

Order of Operations and Integers

Course Content

- Use directed numbers (integers) in practical situations. (eg temperature changes, flood levels.)
- Use the four rules for calculations with whole numbers, decimal fractions and vulgar (and mixed) fractions, including correct ordering of operations and use of brackets.
- Identify and use natural numbers, integers (positive, negative and zero), rational and irrational numbers (e.g. π and $\sqrt{2}$) and real numbers.



Order of Operations

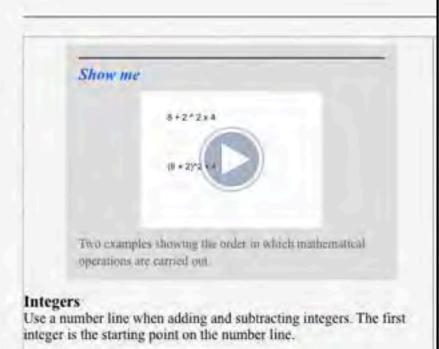
In calculations involving several operations, the word **BEDMAS** shows the order in which each operation should be carried out.

BEDMAS means:

Brackets: Work out the value of any expressions inside brackets.

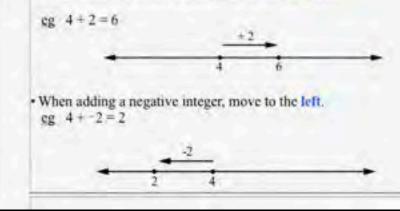
Exponents: Work out the value of any numbers or expressions with exponents or indices. Sometimes shown as 'of' meaning multiply.

Division }	If these two operations occur together, work from left to right
Addition Subtraction }	If these two operations occur together, work from left to right
$\frac{examples}{Calculate:}$ (a) $3 + 4 \times 5$	Answers (a) $3 + 4 \times 5 = 3 + 20 = 23$
(b) 4+(6-2)	(b) $4 + (6 - 2) = 4 + 4 = 8$
(c) $13 - 2 \times 5 + 4$	(c) $13 - 2 \times 5 + 4 = 13 - 10 + 4 = 7$
(d) 3 × 6 ²	(d) $3 \times 6^2 = 3 \times 36 = 108$



Addition

· When adding a positive integer, move to the right.



ercise 1.1 Order of Operations and Integers	Review of Order of Operations and Integers
(a) $23^{n-2} - 2^{n-2}$ (b) $10 - (5+2)$ (c) $70 + 7 + 2$ (d) $70 - 10 + 5$ (e) $3 + 4^2$ (f) $14 - 5 \times 2 + 6$ (g) $8 - (6+2)$ (h) $8 \times 2 + 4$ (i) $4 \times 2 - (3+8)$ (j) $3 - 2 \times (6-6)$ (k) $14 \times 13 - 14 \times 3$ (l) $(3-2) \times 4 + 2$	Question 1 of 10 3+4×2=
2. Calculate: (a) $3+2$	O A. 14
(b) $8 + 5$ (c) $2 + 3$ (d) 3×2	B. 11
(c) $14 = 2$ (f) $4 = 2$ (g) $2 = 3$	O C. 19
(h) 8×2 (i) $-8 + 4$ (j) $(2)^3 \times 4$ (k) $-2 \times 3 \times 4$ (l) $3 - 2 + 5$	O D. 49
3. Evaluate, if $p = -3$ and $q = 2$: (a) $\frac{12}{2}$	
y to do these without a calculator!	
	Check Answer

The table illustrates these rules:

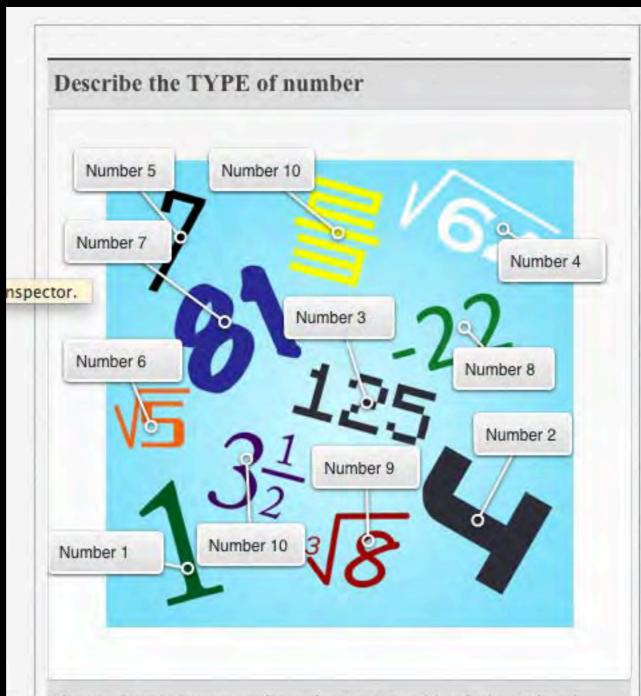
÷/×	+ye	-ye
+ye	+	-
-ve	-	+

John Napier (1550-1617)

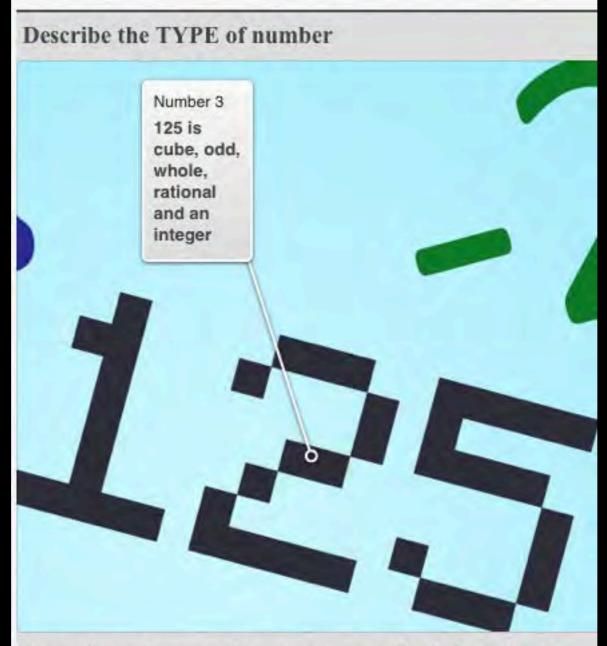
John Napier was born in Edinburgh in Scotland. As a Laird he was well educated in France spending most of his early years studying agriculture on his farms. He was an inventor and he invented war machines such as a tank-like chariot, guns with a range



of 4 miles and "burning mirrors" to stop a Spanish Armada. Mathematics was his main area of interest and he studied methods for extracting all real roots of positive numbers and began to consider imaginary roots. His major work, however was concerned with calculating methods. One such method was using numbered rods, known as Napier's Bones to perform



Choose from: Square, cube, prime, even, odd, whole, rational, irrational, integer. Give ALL of the types above for each number



Choose from: Square, cube, prime, even, odd, whole, rational, irrational, integer. Give ALL of the types above for each number

Some Special Sequences

-10 Q1/2

A selection of Sequences with Special Properties

The Fibonacci Sequence

The Fibonacci Sequence of numbers is 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233,...

Each number in the sequence is made by adding the two previous numbers.

A formula, called the recursive relation, that produces the sequence can be written

 $\mathbf{F}_n = \mathbf{F}_{n-1} + \mathbf{F}_{n-2}$

The Fibonacci Sequence has many interesting properties including the Golden Ratio.

Write in order, from largest to smallest, the following numbers: 0.1..., 0.11, 10/99, 1111 x 10^-4







_