## 微積分 A 預習測驗 #1

09/12/2013(四), 09/13/2013(五)

Read Chapter 0 – A Preview of Calculus (pages 2-9) and answer the following questions.

1.	Calculus is concerned	with		and		; it deals with	
	that approach other						
2.	The origins of calculu	ıs, go back	at least 2500	years to	the ancient		, who found areas
	using the method of						
3.	Use the above metho (see Figure 3 of page		he area $A$ of t	he regio	on under the g	raph of $y = x^2$ on t	he interval $[0, 1]$
	(a) Let $A_n$ be the a	area of the	union of the	n  shade	ed rectangles a	appeared in the las	t picture of page 3,
	then $A_n =$						
	(b) The desired area	$A = \lim_{n \to \infty}$	$A_n =$				
4. The area problem is the central problem in the branch of calculus called							
	The technique that	we will de	velop in Chap	oter 5 fo	or finding area $\Box$	as will also enable	us to compute the
		of a solid, t	he		of a curve, the	he	of water against
	a dam, the		and			of a rod, and the	
	a dam, the in pumping water out					of a rod, and the	
5.		t of a tank		nch of ca	lculus called	of a rod, and the	, which
5.	in pumping water ou	t of a tank	rise to the bran				
5.	in pumping water ou The tangent problem	t of a tank has given r til more th	rise to the bran	after i	ntegral calculu	Is. The main ideas	
5.	in pumping water our The tangent problem was not invented unt	t of a tank has given r til more th	rise to the bran an 2000 years m	after in athemat	ntegral calcult tician Pierre F	us. The main ideas fermat (1601-1665),	behind differential
5.	in pumping water our The tangent problem was not invented unt calculus are due to th	t of a tank has given r til more th ne mat	rise to the bran an 2000 years m hematicians J	after in athemat	ntegral calcult tician Pierre F llis (1616-1703	us. The main ideas fermat (1601-1665), B), Isaac Barrow (16	behind differential and were developed
	in pumping water our The tangent problem was not invented unt calculus are due to th by the	t of a tank has given r til more th ne mat and the Ge	rise to the bran an 2000 years m hematicians J erman mathen	after in athemat ohn Wal	ntegral calculu tician Pierre F llis (1616-1703 Gottfried Leil	us. The main ideas fermat (1601-1665), B), Isaac Barrow (16	behind differential and were developed 30-1677), and Isaac
	in pumping water our The tangent problem was not invented unt calculus are due to th by the Newton (1642-1627) a	t of a tank has given r til more th ne mat and the Ge	rise to the bran an 2000 years m hematicians J erman mathen l their chief pro-	after in athemat ohn Wa natician oblems,	ntegral calculu tician Pierre F llis (1616-1703 Gottfried Leil The	us. The main ideas ermat (1601-1665), 8), Isaac Barrow (16 bniz (1646-1716).	behind differential and were developed 30-1677), and Isaac
	in pumping water our The tangent problem was not invented unt calculus are due to th by the Newton (1642-1627) a The two branches of c	t of a tank has given n til more th ne mat and the Ge calculus and e very	rise to the bran an 2000 years m hematicians J erman mathen d their chief pro	after in athemat ohn Wa natician oblems, but it tu	ntegral calculu tician Pierre F llis (1616-1703 Gottfried Leil The urns out that t	IS. The main ideas fermat (1601-1665), 3), Isaac Barrow (16 bniz (1646-1716). problem and here is a very close	behind differential and were developed 30-1677), and Isaac