Full NAME:_	
(BLOCK CAPITALS)	
Student Number:_	
TUTORIAL GROUP:_	

## 4CCM122A Geometry I: Test 2

## CALCULATORS MAY NOT BE USED

ANSWER GRID: put a cross in ONE BOX for the correct answer for each question. If you change your mind and want to correct your answer, obliterate your incorrect answer by shading its box, and put a new cross in the box for the correct answer.

	a	b	с	d	е
1					
2					
3					
4					

MARKS: each correct answer = +5, incorrect = -1, none (or more than one) = 0.

Do any rough working on the back of this sheet, or on a NAMED separate sheet. You are strongly advised to draw diagrams.

- **1.** A quadrilateral having two and only two sides parallel is a trapezoid. Let ABCD be a trapezoid such that  $AB \parallel DC$  and  $\angle A = 80^{\circ}$ . What is  $\angle D$ ?
  - (a)  $100^{\circ}$  (b)  $80^{\circ}$  (c)  $280^{\circ}$  (d)  $10^{\circ}$
  - (e) None of the above
- **2.** Let ABC be a right triangle such that  $\angle A = 90^{\circ}$ ,  $\angle B = 30^{\circ}$  and BC = 6. What is AB?

(a) $3\sqrt{3}$	(b) 6
(c) 9	(d) 3
(e) None of the above	

**3.** Let ABCD be a trapezoid such that  $AB \parallel DC$ , AB = 4, AD = 2 and  $\angle ADB = 90^{\circ}$ . What is  $\angle ADC$ ?

(a) $120^{\circ}$	(b) 150°
(c) 90°	(d) $125^{\circ}$
$(\cdot)$ NI $\cdot \cdot \cdot$	

- (e) None of the above
- 4. Let ABC be a triangle inscribed in a circle of radius 2.5. Suppose AB = 5 and AC = 4. What is BC?

(a) 3	(b) 4
(c) 2.5	(d) 2
(e) None of the above	

## Solutions

	a	b	с	d	е
1	×				
2	×				
3	×				
4	×				

**Note:** Your answers, if correct, will *not* have given the above pattern, because (as a guard against cheating) there were several versions of the question paper, with the possible answers arranged in various orders.

- 1. (a) Because their sum has to be  $180^{\circ}$ .
- 2. (a) Given these data, AC = 3 because ABC is half of an equilateral triangle. Therefore  $AB = \sqrt{36 9}$
- **3.** (a) Since ABD is half of an equilateral triangle,  $\angle ABD = 30^{\circ}$ .  $\angle ADC = \angle ADB + \angle BDC$  and, by the properties of parallel line,  $\angle CDB = \angle ABD$ .
- 4. (a) AB = 5 implies that AB is a diameter of the circle. Therefore, by Thales Theorem,  $\angle ACB = 90^{\circ}$ . Using the Pythagorean Theorem, BC = 3.

G Tinaglia—15 November 2010