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

4CCM122A Geometry I: Test 1

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.** Let ABC be a triangle and suppose there exists a point D on BC and between B and C such that AB = AD. If $\angle ADC = 150^{\circ}$, then what is $\angle ABC$?
 - (a) 75° (b) 150° (c) 60° (d) 30°
 - (e) None of the above
- **2.** Let ABC be a triangle and let M and N be two points respectively on AB and AC such that $\angle ABC = \angle AMN$. Suppose that AB = 2, AM = 1 and BC = 4. What is MN?
 - (a) 1 (b) 3 (c) 4 (d) 2
 - (e) None of the above
- **3.** All students in the class are British. Which is the negation of the previous statement?
 - (a) All students in the class are not British
 - (b) There exists a student in the class who is British
 - (c) None of the students in the class are British
 - (d) There exists a student in the class who is not British
 - (e) None of the above
- 4. Let ABC and A'B'C' be two triangles such that $AB = 10, BC = 8, \angle ABC = 62^{\circ}$ and $A'B' = 20, B'C' = 16, \angle A'B'C' = 62^{\circ}$. What is C'A'/CA?
 - (a) 1 (b) 62°
 - (c) 80 (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. (d) $\angle ADB = 180^{\circ} \angle ADC = 30^{\circ}$ and, since ABD is an isosceles triangle, $\angle ABC = \angle ABD = \angle ADB$.
- 2. (d) ABC and AMN have two equal angles and therefore are similar by the (AAA) criterion. $MN = \frac{AM}{AB}BC = 2$.
- **3.** (d)
- 4. (d) By the (SAS) criterion the two triangles are similar and the proportionality quotient is 2.

G Tinaglia—13 October 2008