

**FORM TP 2013038**



TEST CODE **01254032**

MAY/JUNE 2013

**CARIBBEAN EXAMINATIONS COUNCIL  
CARIBBEAN SECONDARY EDUCATION CERTIFICATE®  
EXAMINATION**

**ADDITIONAL MATHEMATICS**

**Paper 032 – General Proficiency**

**Alternative Paper**

*1 hour 30 minutes*

**12 JUNE 2013 (p.m.)**

**Answer the given questions.**

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01254032/F 2013

Answer the given questions.

1. (a) A circle is drawn with centre at origin, O, and radius 6 cm. Find the coordinates of all intersections of the circle with an origin centred square of side length 10 cm whose sides are parallel to the coordinate axes as illustrated in Figure 1.

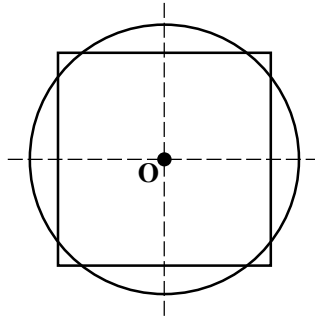


Figure 1

(10 marks)

- (b) The cuboid shown in Figure 2 has width  $x$  m and its length is twice its width. The volume of the cuboid is  $720 \text{ m}^3$ .

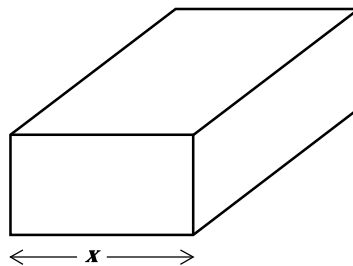


Figure 2

- (i) Find an expression for the height,  $h$ , of the cuboid in terms of  $x$ . (3 marks)
- (ii) Show that an expression for the surface area,  $A$ , of the cuboid is given by
- $$A = \frac{2160}{x} + 4x^2. \quad (3 \text{ marks})$$
- (iii) Hence show that  $A$  has a stationary value when  $x = 3\sqrt[3]{10}$ . (4 marks)

Total 20 marks

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.