

3815/1

BGCSE

School Number	Candidate Number
Surname and Initials	

# MATHEMATICS

PAPER 1 (CORE/EXTENDED) 3815/1

Tuesday **21 MAY 2019** 1:00 P.M.–2:30 P.M.

Additional materials:  
Calculator (not graphing)  
Geometrical instruments

## MINISTRY OF EDUCATION NATIONAL EXAMINATIONS

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION

### INSTRUCTIONS TO CANDIDATES

**Do not open this booklet until you are told to do so.**

Write your school number, candidate number, surname and initials in the spaces provided at the top of this page.

Answer **ALL** questions in the spaces provided for each question.

**ALL** working must be shown.

**ALL** working must be done in blue or black ink, except for drawings, lines and constructions which may be done in pencil.

### INFORMATION FOR CANDIDATES

Calculators [**NOT GRAPHING CALCULATORS**] may be used.

Tracing paper may be used.

Geometrical instruments are required.

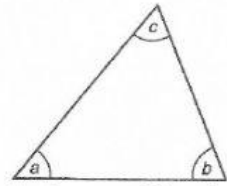
The mark for each question, or part question, is shown in brackets [ ].

The total number of marks for this paper is 100.

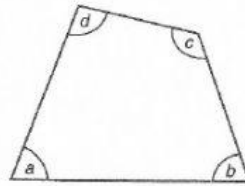


This question paper consists of 12 printed pages and 0 blank pages.

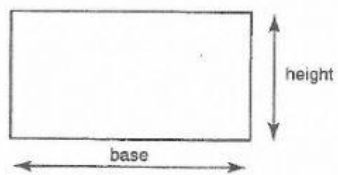
### INFORMATION AND FORMULAE



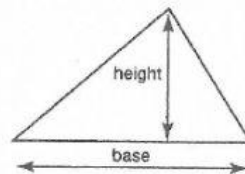
Angle sum of triangle  
 $a + b + c = 180^\circ$



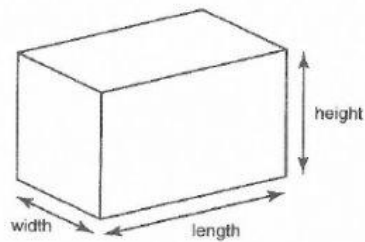
Angle sum of quadrilateral  
 $a + b + c + d = 360^\circ$



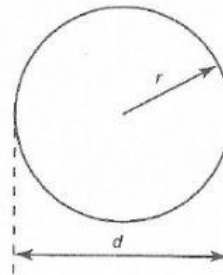
Area of rectangle = base  $\times$  height



Area of triangle =  $\frac{\text{base} \times \text{height}}{2}$



Volume of cuboid = length  $\times$  width  $\times$  height



Circumference of circle =  $2\pi r$  or  $\pi d$   
Area of circle =  $\pi r^2$

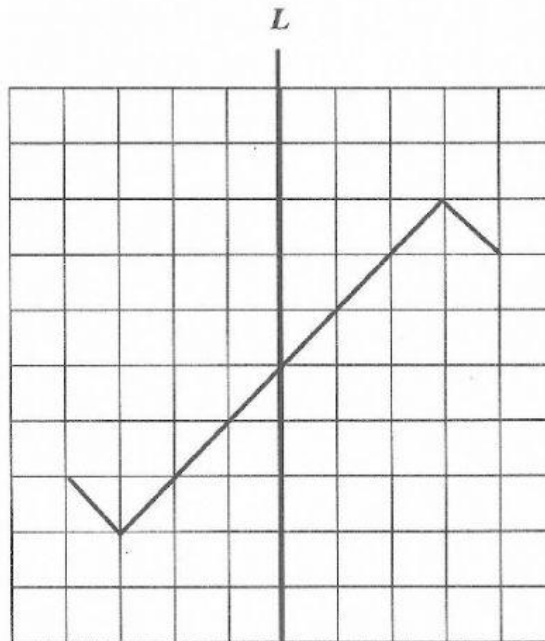


1. Write down the next two numbers in the sequence

0, 1, 4, 9, \_\_\_\_\_, \_\_\_\_\_.

[2]

2. Complete the diagram so that it is symmetrical about the line  $L$ .



[2]

3. Simplify

$$12 + 3(9 - 5) \div 6$$

Answer: \_\_\_\_\_ [3]

4. The shuttle bus leaves the hotel for the airport every 45 minutes.

A bus left the hotel at 10:40 a.m.

- (a) Calculate the time when the next bus will leave.

Answer: \_\_\_\_\_ [2]

The 12:55 p.m. shuttle bus arrived at the airport at 1:22 p.m.

- (b) Calculate the time taken for the journey.

Answer: \_\_\_\_\_ mins [2]

5. *PennyWise Store* has a sale on shampoo at 4 bottles for \$14.76.  
*SmartMart* has a sale on the same shampoo at 2 bottles for \$11.37 then get one free.  
Determine which store gives the better buy. Show your working to support your answer.

Answer: \_\_\_\_\_ [4]

6. Solve the following equations.

(a)  $19q = 28 + 12q$

Answer: \_\_\_\_\_ [2]

(b)  $\frac{2t}{3} = 14$

Answer: \_\_\_\_\_ [2]

- 7.



A triathlon includes swimming, long-distance running and cycling.

The distance for swimming is  $x$  miles.

The long-distance run is 11 times longer than the distance for swimming.

The distance for cycling is 85.8 miles longer than the distance for swimming.

Write an expression, in terms of  $x$ , for

- (a) the distance run,

Answer: \_\_\_\_\_ [1]

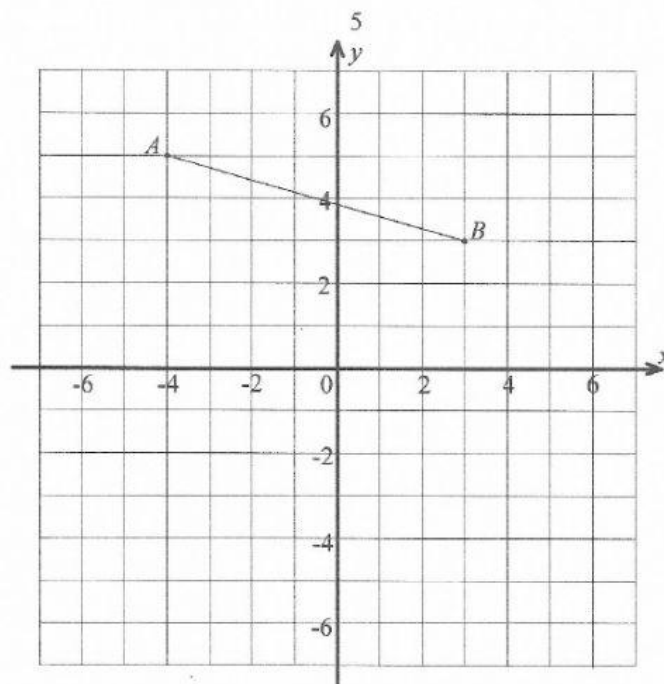
- (b) the distance cycled,

Answer: \_\_\_\_\_ [1]

- (c) the total distance of the triathlon, giving your answer in simplest form.

Answer: \_\_\_\_\_ [2]

8.



- (a) Write down the coordinates of the point A.

Answer: \_\_\_\_\_ [1]

- (b) Plot and label the point C(1, -4).

[1]

- (c) Draw the line segment BC.

[1]

- (d) Plot and label the point D so that ABCD forms a rectangle.

[1]

9. 22.399, 22.99, 22.0999, 22.499, 22.909, 22.599

From the above list of numbers select and write down

- (a) the largest number,

Answer: \_\_\_\_\_ [1]

- (b) the smallest number,

Answer: \_\_\_\_\_ [1]

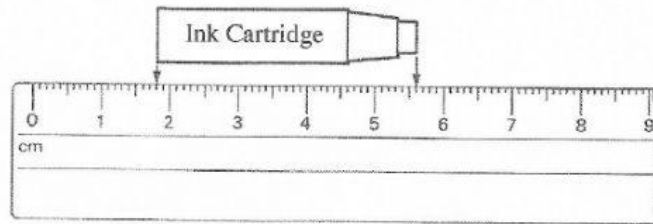
- (c) the numbers that are larger than  $22\frac{1}{2}$ .

Answer: \_\_\_\_\_ [2]





10.



- (i) Use the ruler given to calculate the length, in centimetres, of the ink cartridge.

Answer: \_\_\_\_\_ [2]

- (ii) Convert your measurement in (a) from

- (iii) centimetres to millimetres,

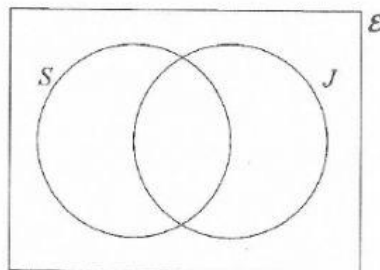
Answer: \_\_\_\_\_ mm [1]

- (iv) centimetres to metres.

Answer: \_\_\_\_\_ m [1]

11. Evan did a survey in his class on the TV programmes *Splashdown* (*S*) and *Jammin* (*J*). Fifteen students watch both programmes. Twenty-two watch *Splashdown*. Six watch *Jammin* only. There are 32 students in the class.

- (a) Enter the above data in the Venn diagram below.



[4]

- (b) Using the information in your Venn diagram, write down the number of students who watch

- (i) only *Splashdown*,

Answer: \_\_\_\_\_ [1]

- (ii) neither *Splashdown* nor *Jammin*.

Answer: \_\_\_\_\_ [1]

12. Alex has a collection of 180 baseball cards. In his collection, there are 72 cards of the Cougar team, 35% of the Lynx team and  $\frac{1}{4}$  of the Panther team.

Calculate

- (a) the fraction, in lowest terms, of his collection that are Cougar cards,

Answer: \_\_\_\_\_ [2]

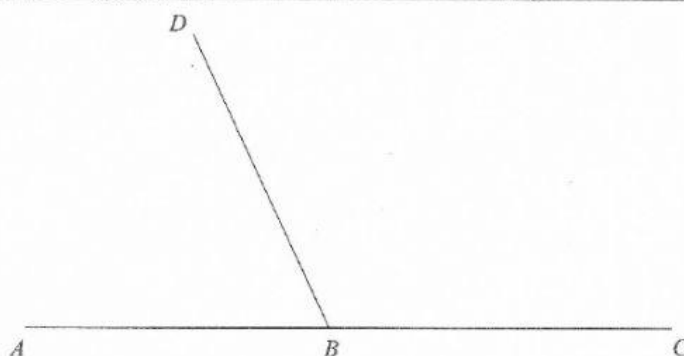
- (b) the number of Lynx cards,

Answer: \_\_\_\_\_ [2]

- (c) the number of Panther cards.

Answer: \_\_\_\_\_ [2]

13.



- (a) Using a protractor, measure and write down the size of  $\angle ABD$ .

Answer: \_\_\_\_\_ [1]

- (b) Leaving in ALL construction lines, use a pencil, ruler and a pair of compasses only to

- (i) bisect the line segment  $BC$ , [2]

- (ii) bisect  $ABD$ . [3]

14.



*FlightCraft Inc.* builds commercial aircraft. Their aircraft model FC1 has a seating arrangement with 6 rows of 4 seats across in first class and 28 rows of 6 seats across in economy class.

- (a) Calculate the total number of passengers that the plane can carry.

Answer: \_\_\_\_\_ [3]

The aircraft model FC1 has the specifications given in the table below.

MODEL FC1	
Nonstop flight distance	5210 miles
Cruising speed	567 mph
Gallons of fuel used per hour	2031 gals.
Costs (to fly one hour):	
Crew	\$1530
Fuel	\$1716

- (b) Calculate

- (i) how many gallons of fuel are needed for a 4-hour flight,

Answer: \_\_\_\_\_ [1]

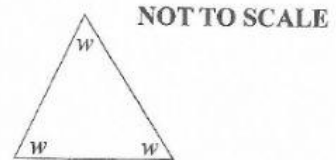
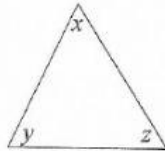
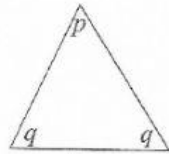
- (ii) the total cost for the crew and fuel for a 3-hour flight.

Answer: \_\_\_\_\_ [2]



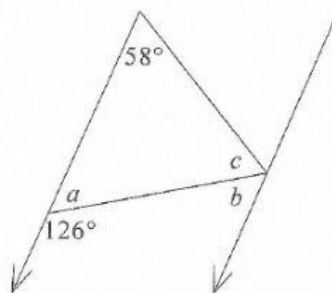


15. (a) Write down the special name of each triangle.



- (i) \_\_\_\_\_ (ii) \_\_\_\_\_ (iii) \_\_\_\_\_ [3]

(b)



NOT TO SCALE

Calculate the size of

- (i) angle  $a$ ,

Answer: \_\_\_\_\_ [1]

- (ii) angle  $b$ ,

Answer: \_\_\_\_\_ [1]

- (iii) angle  $c$ .

Answer: \_\_\_\_\_ [1]

