
BGCSE
MATHEMATICS
EXAMINATION PAPERS
UNDERSTAND • PRACTICE • SUCCEED

THE OPENHANDED CLASSROOM

LEARN MORE. ACHIEVE MORE. SMILE MORE.

BGCSE CLASSES

- Exam-Focused Learning
- Past Papers & Strategies
- Stronger Understanding
- Better Grades, Brighter Future

CLICK HERE

SAT CLASSES

- Smart Test Strategies
- Stronger Scores
- Time Management Skills
- College & Scholarship Ready

CLICK HERE

BJC CLASSES

- Clear, Simple Explanations
- Focus on Understanding
- Help That Fits Your Pace
- Build Confidence, Get Results

CLICK HERE

EXPERT TEACHING. PROVEN RESULTS.

LEARN SMARTER. ACHIEVE MORE.

FOCUSED SUPPORT. REAL RESULTS.

THEOPENHANDEDCLASSROOM:
(242) 426-8891

EXAM-REAL. EXAM-PROVEN.

FREE LISTENING COMPREHENSION AUDIO FILES

THE EXACT AUDIO USED IN PAST BJC & BGCSE EXAMS

REAL EXAMS
The exact listening comprehension audio from past papers.

REAL PREPARATION
Hear what you'll hear in the real exam.

REAL RESULTS
Practise with purpose. Improve your confidence and performance.

AVAILABLE FOR:

- BJC ENGLISH
- BGCSE ENGLISH LANGUAGE
- BJC FRENCH
- BJC SPANISH
- BGCSE FRENCH
- BGCSE SPANISH

WHY THESE AUDIO FILES MATTER

EXACT AUDIO
The exact recordings used in past BJC & BGCSE exams.

EXAM FAMILIARITY
Get used to the real voices, speed, accents and exam conditions.

STRATEGIC ADVANTAGE
Walk in confident knowing exactly what to expect.

100% FREE
High quality. No cost. Just results.

CLICK HERE
DOWNLOAD • START PRACTISING

BETTER PREPARATION.
BETTER RESULTS.
You've got this!

PAST EXAMS. REAL AUDIO. BETTER PREP. GREATER CONFIDENCE.

MATHEMATICS

PAPER 2 (CORE/EXTENDED) 3815/2

Tuesday 31 MAY 2022 9:00 A.M.–11:00 A.M.

Additional materials:
Calculator (not graphing)
Geometrical instruments
Answer booklet
Graph paper

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.

Remove the graph paper from the question paper. Close the question paper.

Write your school number, candidate number, Surname and Initials in the spaces provided on the answer booklet **AND** the graph paper. Place the graph paper in the answer booklet.

Answer **ALL** questions in the answer booklet.

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 may be used. [**NO GRAPHING CALCULATORS ALLOWED**].

Tracing paper may be used.

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

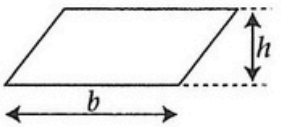
The total number of marks for this paper is 100.

This question paper consists of 10 printed pages and 2 blank pages.

INFORMATION AND FORMULAE

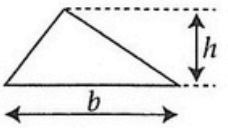
MENSURATION

Parallelogram



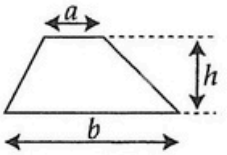
Area = bh

Triangle



Area = $\frac{1}{2}bh$

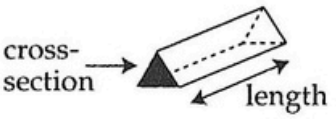
Trapezium



Area = $\frac{1}{2}(a+b)h$

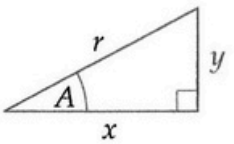
Circle (radius r, diameter d)	Circumference	$= 2\pi r$ or πd
	Area	$= \pi r^2$
Cylinder (radius r, height h)	Volume	$= \pi r^2 h$
Prism	Volume	= area of cross-section × length

e.g. triangular prism

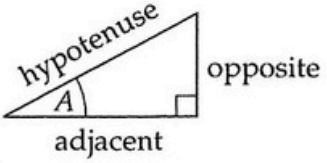


TRIGONOMETRY

Right-angled triangle



$r^2 = x^2 + y^2$, (result of Pythagoras)



$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}, \cos A = \frac{\text{adjacent}}{\text{hypotenuse}}, \tan A = \frac{\text{opposite}}{\text{adjacent}}$$

NUMBER

Standard form is $a \times 10^n$ where $1 \leqslant a < 10$ and n is an integer.

1. The distance around an Olympic Track is approximately 1,312 feet, correct to the nearest foot. Write down

   (a) the lower bound of the actual distance around the track, [1]

   (b) the upper bound of the actual distance around the track. [1]

---

2. (a) Solve the inequality $7 - 5x \leq 17$ [3]

   (b) Represent the solution set from part (a) on a number line [2]

---

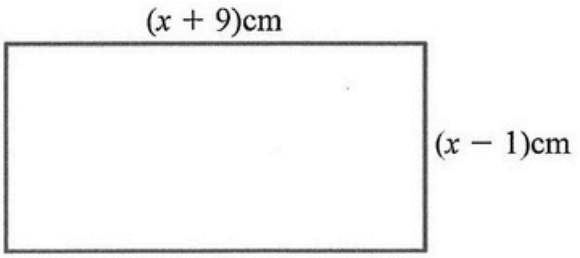
3. Simplify:

   (a) $\frac{x}{5} + \frac{7x}{3}$ [2]

   (b) $\frac{45g}{8} \div \frac{15g^2}{24}$ [3]

---

4. A rectangle is shown below.



The length of the rectangle is $(x + 9)$ cm. The width of the rectangle is $(x - 1)$ cm.

   (a) Form an expression for the perimeter of the rectangle. [1]

   (b) Given that the perimeter is 64 cm, form an equation and find the value of x. [4]

   (c) State the width of the rectangle. [1]

---

5. Mr. Ferguson earns $12.50 per hour for a 40-hour week as a construction worker. He is paid double time for any hours worked in excess of 40 hours.

Calculate

(a) his wage for a normal working week, [1]

(b) his hourly overtime rate of pay, [1]

(c) his wage for a week in which he works 48 hours, [3]

(d) the number of overtime hours for a week in which he earned $800. [3]

---

6. While visiting Canada on a conference, Laura converted $825 BSD to Canadian dollars at the rate below:

$1 Bahamian (BSD) = $1.31 Canadian (CAD)

(a) Calculate the amount of $ CAD she received. [2]

Her expenses for her stay were:

- Hotel $150 CAD per night for 2 nights
- Transportation $45 CAD
- Food $135 CAD
- Miscellaneous $110.75 CAD

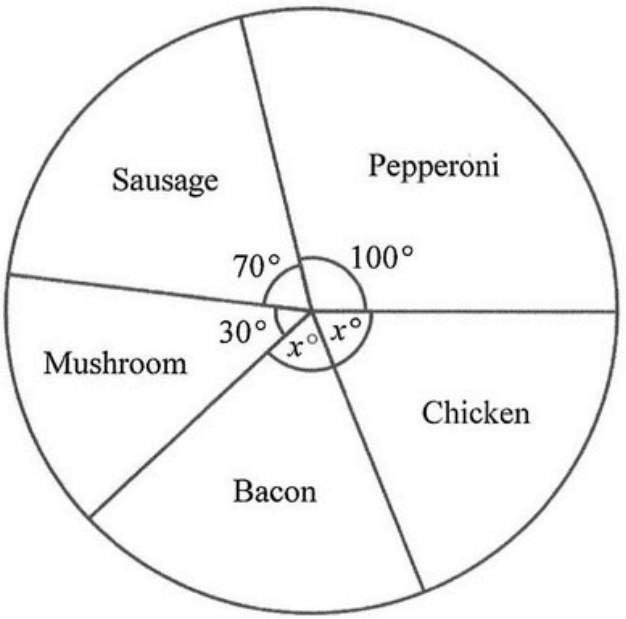
(b) Calculate her total expenses in $ CAD. [2]

After paying these expenses, Laura converts the remaining balance back to Bahamian dollars.

(c) Calculate the amount of $ BSD she received to the nearest cent. [3]

---

7. A group of 252 students were asked to pick their favourite pizza toppings.
The same number of students picked Bacon and Chicken.
The results are shown in the pie chart below.



NOT TO SCALE

(a) Calculate

(i) the angle x, [3]

(ii) how many more students liked Pepperoni than Mushrooms. [3]

(b) Write, in lowest terms, the fraction of students who liked Sausage [1]

---

8. Solve the following pair of simultaneous equations:

$3x + 5y = 44.5$
$y = 2x + 5$ [5]

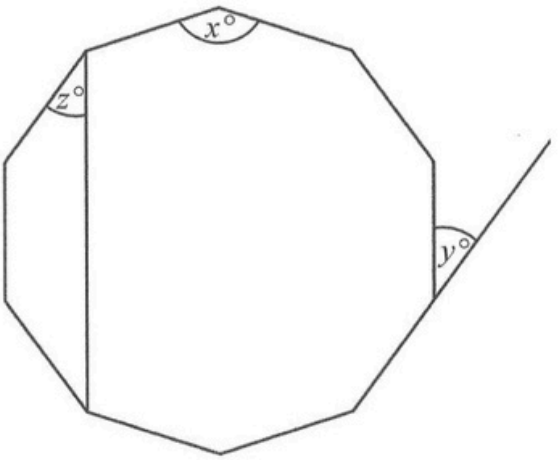
---

9. The formula $d = \frac{(v+u)t}{2}$, is particularly useful in the study of Physics.

Transpose the formula to make v the subject. [3]

---

10. The polygon below is a regular decagon.



Calculate the size of the angles.

(a) x [2]

(b) y [1]

(c) z [2]

---

11. (a) Factorise $63m^3n + 28mn^2 - 7mn$ [3]

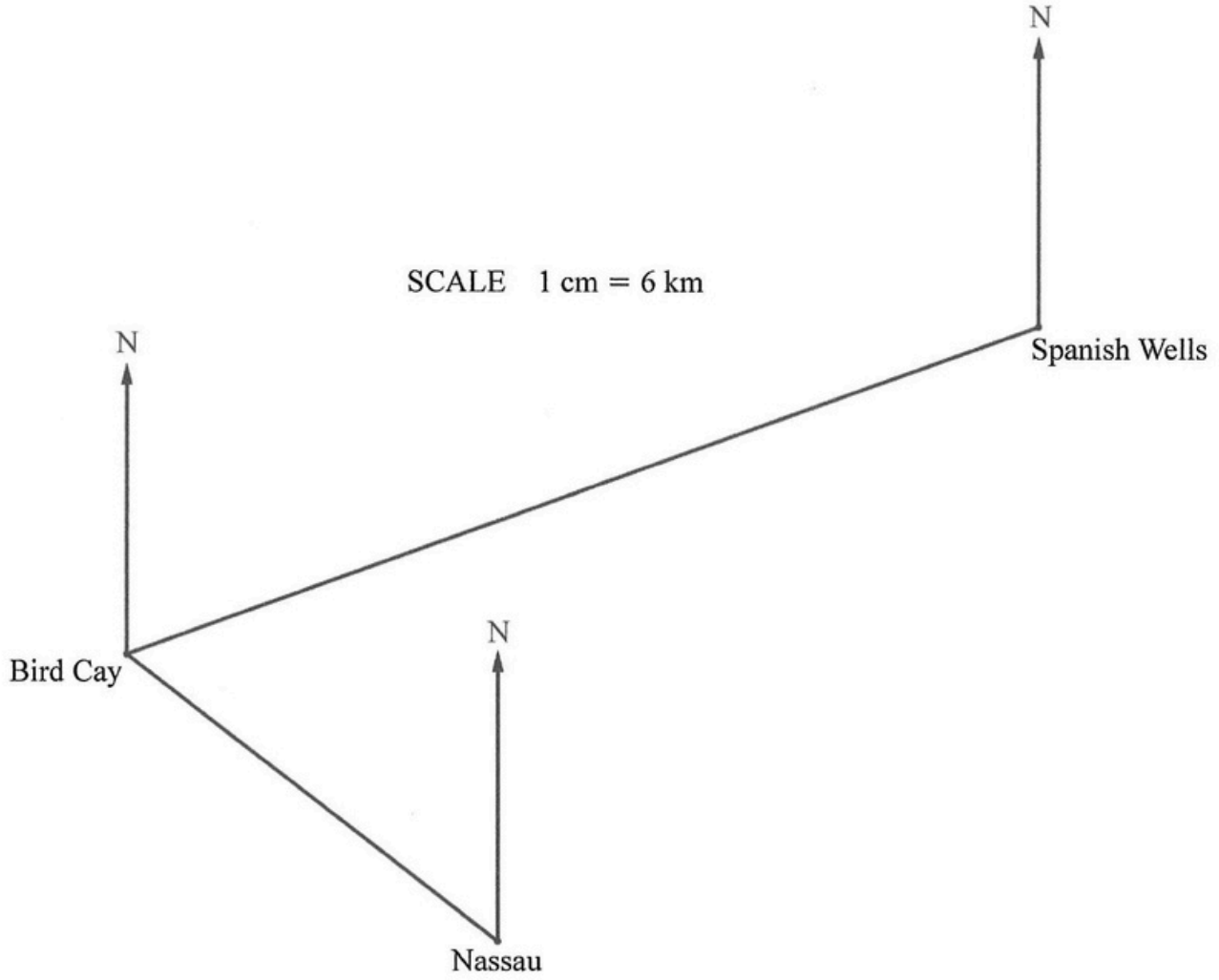
(b) Simplify:

(i) $3(2x - 3) - 4(x + 7)$ [3]

(ii) $\left(\frac{2p^3}{q}\right)^3$ [3]

---

12. The scale drawing below shows the relative distances and directions of Bird Cay, Nassau, and Spanish Wells to each other.



(a) Given a scale of 1 cm = 6 km, measure and state

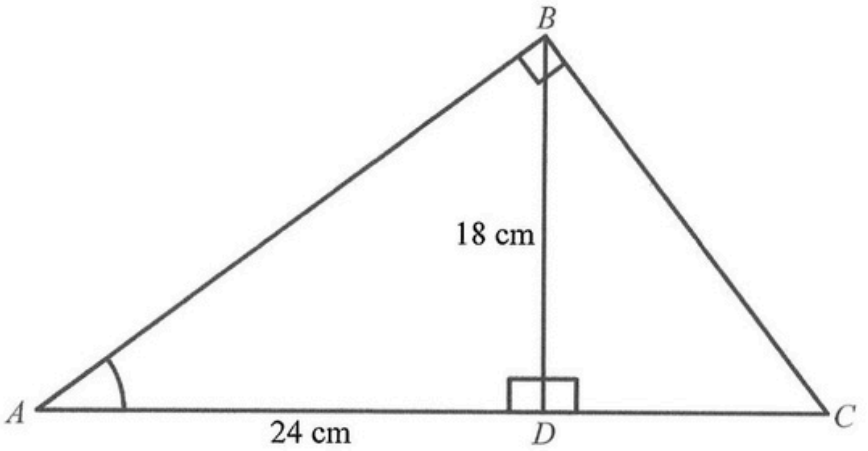
(i) the distance, in km, between Bird Cay and Nassau, [2]

(ii) the bearing of Nassau from Bird Cay, [1]

(iii) the bearing of Bird Cay from Spanish Wells. [2]

(b) Andros Town is 45 km from Nassau. If this information were included in the above diagram, calculate the distance on the drawing in cm. [1]

13.



In the diagram above, triangle ABC is a right-angled triangle and BD is perpendicular to AC.

$AD = 24$ cm and $BD = 18$ cm.

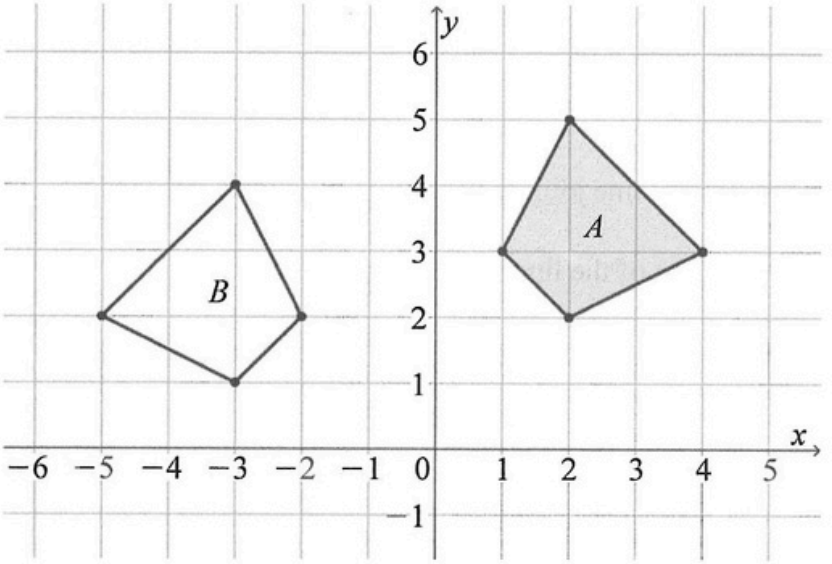
(a) Find length AB. [3]

(b) Find $B\hat{A}D$, correct to the nearest whole number. [3]

(c) Find $B\hat{C}D$. [1]

(d) Find length BC, correct to 3 significant figures. [3]

14.



In the above diagram, object A is transformed to produce image B.

(a) Fully describe this transformation. [3]

(b) (i) On graph paper, using a scale of 1 cm to 1 unit on each axes for $-6 \leqslant x \leqslant 9$ and $-5 \leqslant y \leqslant 11$, draw and label a copy of object A. [2]

(ii) Draw the image of A after a reflection across the line $y = 1$.
Label this image C. [2]

(iii) Translate A by the vector $\begin{pmatrix} -5 \\ -6 \end{pmatrix}$. Label the image D. [2]

(iv) An enlargement of scale factor 2 from the origin maps A onto E.
Draw and label the image of this transformation. [3]

15. **ANSWER THIS ENTIRE QUESTION ON THE GRAPH PAPER PROVIDED**

(a) Using a scale of 1 cm to 1 unit, draw and label the x and y axes for $-2 \leqslant x \leqslant 6$ and $-8 \leqslant y \leqslant 6$. [1]

(b) Draw the straight line joining the points (0, 4) and (3, −5). [2]

(c) Find the gradient of the line from part (b). [1]

(d) Copy and complete the table of values for the line with equation $y = 2x - 6$. [2]

x	−1	1	3	4	5
y		−4	0	2	

(e) Draw and label the graph of the line $y = 2x - 6$. [2]

(f) State the coordinates of the y-intercept of the line $y = 2x - 6$. [1]

(g) Write down the coordinates of the point where the two lines intersect. [1]

End]

MATHEMATICS GRAPH PAPER

MINISTRY OF EDUCATION **AB7**

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

School No.	Candidate No.	Level:	For Examiner's Use
Subject Number & Title:		Paper:	
Surname & Initials:		Section:	
Signature:	Date:	Qu. No.