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MATHEMATICS

PAPER 1 (CORE/EXTENDED) 3815/1

Monday **18 MAY 2020** 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.

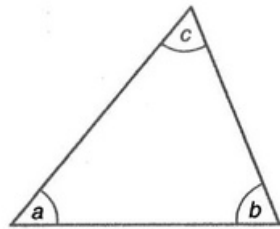
The mark for each question, or part question, is shown in brackets [].

The total number of marks for this paper is 100.

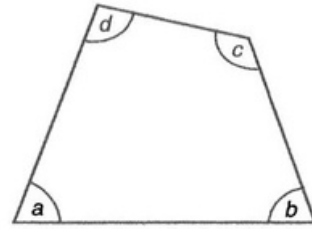


This question paper consists of 13 printed pages and 3 blank pages.

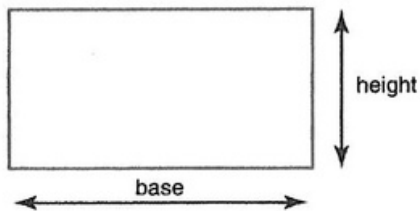
INFORMATION AND FORMULAE



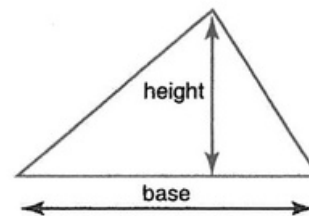
Angle sum of triangle
 $a + b + c = 180^\circ$



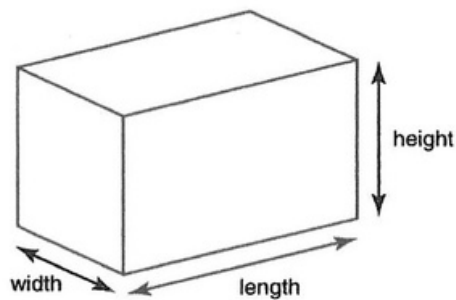
Angle sum of quadrilateral
 $a + b + c + d = 360^\circ$



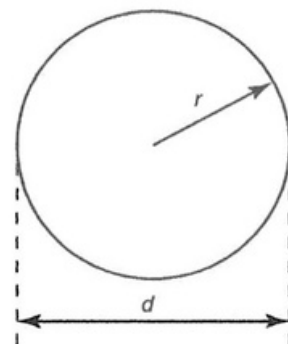
Area of rectangle = base $\times$ height



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 πd
Area of circle = πr^2



1. Write down the next two numbers in the sequence

36, 25, 14, _____, _____.

Answer: _____ [2]

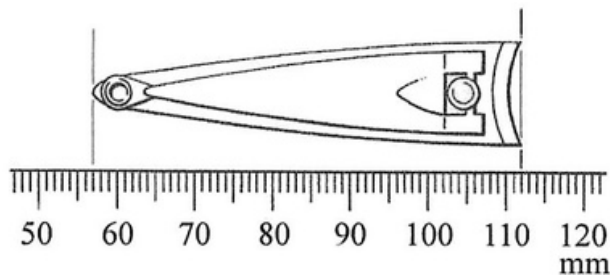
2. (a) Write 72 as a product of its prime factors.

Answer: _____ [2]

- (b) Express your answer in (a) in index form.

Answer: _____ [1]

- 3.



Use the given ruler to calculate the length, in centimetres, of the nail clippers.

Answer: _____ cm [3]

4. Calculate the product of the difference between 401 and 378 and the quotient of 51 and 17.

Answer: _____ [3]

5. Given that $x = -3$ and $y = 4$, calculate the value of $y^3 + xy$.

Answer: _____ [3]

6. Grandma Thompson left \$80 000 to share among Richard, Ken and Angela in the ratio 3 : 6 : x respectively.

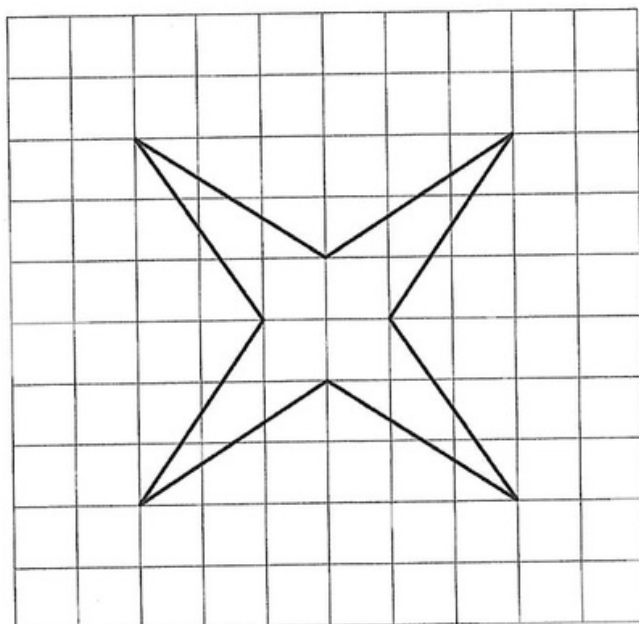
- (a) If Ken received \$30 000, how much did Angela receive?

Answer: \$ _____ [2]

- (b) Give the ratio for Richard, Ken and Angela in simplest form.

Answer: _____ [2]

7. On the diagram below, draw in **all** the lines of symmetry.



[4]



8. {42, 43, 44, 45, 46, 47, 48, 49, 50}

From the set of numbers above, write down the

- (a) multiple of 7 that is also a perfect square,

Answer: _____ [2]

- (b) prime number that is also a factor of 215.

Answer: _____ [2]

9. Solve the following equations.

- (a) $2a + 9 = 32$

Answer: _____ [2]

- (b) $\frac{2}{3}b = 12$

Answer: _____ [2]

10. For the *Carnival* concerts, the price of a student ticket is p dollars.
The price of an adult ticket is \$9 more than the price of a student ticket.

Write down in terms of p

- (a) the price of an adult ticket,

Answer: \$ _____ [1]

- (b) the total cost of tickets, in simplest form, for two adults and three students.

Answer: \$ _____ [3]



11. Angela's first class of the school day begins at 8:55 a.m. and ends at 10:05 a.m.

(a) How long is the class time?

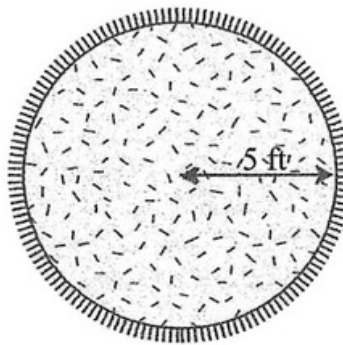
Answer: _____ min [2]

Angela's lunch break begins at 12:15 p.m. and lasts for 55 minutes.

(b) At what time does her lunch break end?

Answer: _____ [2]

12. A circular rug has a radius of 5 feet as shown.



For this rug and using $\pi = 3.14$, calculate

(a) the circumference,

Answer: _____ ft [2]

(b) the area.

Answer: _____ ft^2 [2]



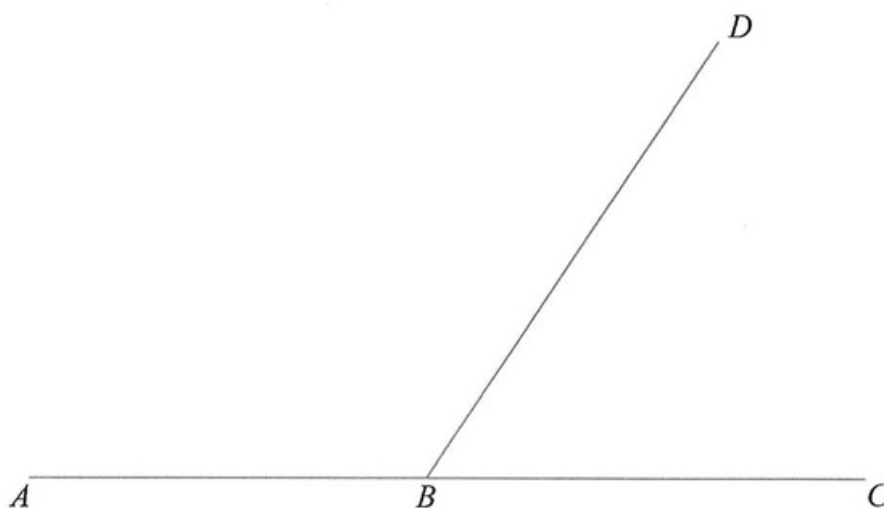
13. Henry drives a car for 7 miles and takes $\frac{1}{2}$ hr.

Patrice drives a boat for 12 miles and takes 45 minutes.

Which person has the faster speed? Show working to support your answer.

Answer: _____ [5]

14.



- (a) Using centimetres, measure and write down the length of BD .

Answer: _____ cm [1]

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

Answer: _____ ° [1]

- (c) Leaving in **all** construction lines, use only a pencil, ruler and a pair of compasses to bisect $\angle DBC$. [3]

15. *Furniture Discount* is selling a bedroom set using the plan below.

Bedroom Set	
Regular Price	\$5,600
Independence Sale (July 7–12)	20% cash discount
Hire Purchase Plan	10% down payment 15% interest on balance Balance and interest paid in $1\frac{1}{2}$ years

- (a) Calculate how much Mr. Rolle paid for the bedroom set if he bought it on July 8.

Answer: _____ [2]

Mr. Smith bought the same set on July 15 using the hire purchase plan.

Calculate

- (b) (i) his down payment,

Answer: _____ [1]

- (ii) his interest,

Answer: _____ [2]

- (iii) his monthly payment.

Answer: _____ [2]



16. The earnings of Annette for this week at her part-time job are:

\$10.80, \$16.20, \$10.80, \$27.00, \$10.80, \$16.20

- (a) Calculate

- (i) her mean earnings for this week,

Answer: \$ _____ [2]

- (ii) her median earnings.

Answer: \$ _____ [3]

- (b) Write down her modal earnings.

Answer: \$ _____ [1]

-
17. Janet is paid \$12.60 per hour for the first 40 hours of a regular work week.
Overtime is paid at time and a half.

Calculate her earnings for

- (a) a regular 40-hour work week,

Answer: \$ _____ [1]

- (b) one hour overtime,

Answer: \$ _____ [2]

- (c) a 43-hour week.

Answer: \$ _____ [3]

18. Express

- (i) $\frac{19}{40}$ as a decimal number,

Answer: _____ [1]

- (ii) 0.08 as a fraction in lowest terms,

Answer: _____ [2]

- (iii) $3\frac{17}{20}$ as a percentage.

Answer: _____ [2]

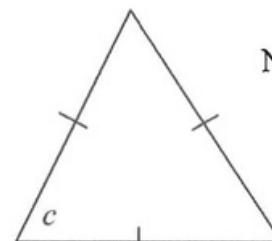
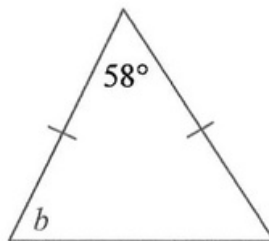
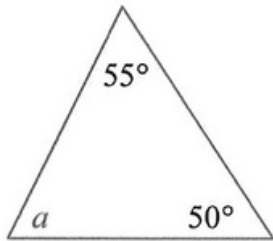
- (b) A seamstress requires $1\frac{2}{3}$ yards of cloth to make a uniform shirt.

Calculate the amount of cloth needed to make **ten** such uniform shirts.

Answer: _____ yards [2]



19. Calculate the size of



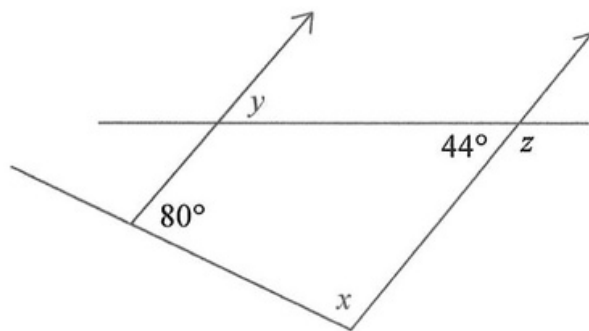
NOT TO SCALE

- (a) (i) angle a,
(ii) angle b.
(iii) angle c.

Answer: _____° [1]

Answer: _____° [1]

Answer: _____° [1]



NOT TO SCALE

- (b) (i) angle x,
(ii) angle y,
(iii) angle z.

Answer: _____° [1]

Answer: _____° [1]

Answer: _____° [1]

20. Simplify

(a) $5(2x - 9)$

Answer: _____ [2]

(b) $7s - 6t - s + 5t$

Answer: _____ [2]

(c) $6w \times \frac{1}{3}w^3$

Answer: _____ [2]

(d) $24p^7 \div 8p^2$

Answer: _____ [2]



21. *Mark's Men's Clothing* has a sale on all items in the store.

Allen selected a sport shirt with a regular price of \$45.
He bought it at a reduced price of 30% off.

- (a) Calculate the reduced price paid for the shirt.

Answer: \$ _____ [2]

Branden bought a jacket at the reduced price of \$66.

To this is added the VAT at the rate of 7.5%.

- (b) Calculate the total price paid for the jacket.

Answer: \$ _____ [3]

Corey selected a pair of shorts with a regular price of \$39.

He bought it at a reduced price of \$29.25.

- (c) Calculate

- (i) the savings,

Answer: \$ _____ [1]

- (ii) the percentage savings.

Answer: _____ % [2]



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