



MINISTRY OF EDUCATION AND HUMAN RESOURCES,
TERTIARY EDUCATION AND SCIENTIFIC RESEARCH
MAURITIUS EXAMINATIONS SYNDICATE

NATIONAL ASSESSMENT GRADE 9

INDEX NUMBER

SCHOOL NAME

CLASS/SECTION

MATHEMATICS

October 2017
1 hour 45 minutes

Students answer on the Question Paper.

READ THESE INSTRUCTIONS

Write your index number, the name of your school and your class/section in the spaces provided above.

Write in dark blue or black ink.

You may use a soft pencil for any diagram or rough working.

Do **not** use correction fluid.

There are **20** questions in this paper.

Check that this document consists of **20** printed pages.

Any discrepancy in this document must be immediately notified to the responsible officer in your school.

Answer **ALL** questions.

If working is needed for any question it must be shown in the space below that question.

Omission of essential working may result in loss of marks.

Diagrams are **not** drawn to scale.

USE OF ELECTRONIC CALCULATORS IS NOT ALLOWED.

The number of marks is given in brackets [] at the end of each question or part question.

The total mark for this paper is **100**.

1. (a) Evaluate

(i) $6 + 2 \times 5$

Answer: [1]

(ii) $5.6 \div 0.2$

Answer: [1]

(b) Write 5.785 correct to **one** decimal place.

Answer: [1]

2. (a) Write down the **next** term in the sequence:

20 , 18 , 16 , 14 ,

Answer: [1]

(b) Express $\frac{13}{20}$ as a **percentage**.

Answer: % [1]

(c) Express 0.64 as a **fraction** in its lowest term.

Answer: [1]

3. (a) Evaluate $\frac{3}{8} + \frac{2}{5}$.

Answer: [1]

(b) Convert 6 hours into minutes.

Answer: minutes [1]

(c) Convert $4\frac{2}{5}$ metres into centimetres.

Answer: cm [1]

4. (a) Simplify

(i) $m^2 \times m^5$,

Answer: [1]

(ii) $(y^4)^2$.

Answer: [1]

(b) Evaluate $4^5 \div 4^3$.

Answer: [1]

5. (a) Given that $a = 5$ and $b = -2$, find the value of $2a - 4b$.

Answer: [1]

- (b) Factorise the following:

(i) $2x + 4$

Answer: [1]

(ii) $9m^2 - 25$

Answer: [2]

6. (a) Given $A = \begin{pmatrix} 6 & 2 \\ 1 & 5 \end{pmatrix}$ and $B = \begin{pmatrix} -1 & 0 \\ 3 & 2 \end{pmatrix}$, find $3A - B$.

Answer: [2]

- (b) Work out :

$$\begin{pmatrix} 1 & 5 \end{pmatrix} \begin{pmatrix} 2 & -1 \\ 0 & 7 \end{pmatrix}$$

Answer: [2]

7. (a) $A = \{s, p, i, n, e, r\}$ and $B = \{s, p, a, d, e\}$.

(i) List the elements of $A \cup B$.

Answer: {.....} [1]

(ii) Find $n(A \cap B)$.

Answer: [1]

(b) Solve the inequality:

$$3 - 4x \leq 11$$

Answer: [3]

(c) Given that $x^2 + y^2 = 24$ and $xy = 5$, find the value of $(x - y)^2$.

Answer: [2]

8. (a) A **regular** polygon has interior angle equal to 120° .

(i) What is the size of an **exterior** angle of the regular polygon?

Answer: [1]

(ii) Hence, or otherwise, find the number of **sides** of the regular polygon.

Answer: sides [1]

(b) Given that vector $\overrightarrow{LM} = \begin{pmatrix} 6 \\ -8 \end{pmatrix}$, find:

(i) \overrightarrow{ML}

Answer: [1]

(ii) $|\overrightarrow{LM}|$

Answer: units [2]

9. (a) Hans sold his watch for Rs 240 and made a loss of 20%.
At what price did Hans **buy** the watch?

Answer: Rs [3]

- (b) Solve the simultaneous equations:

$$2x + 3y = 5$$

$$3x + 4y = 7$$

Answer: $x =$

$y =$ [4]

10. (a) Evaluate $\sqrt{11\frac{1}{9}}$

Answer: [2]

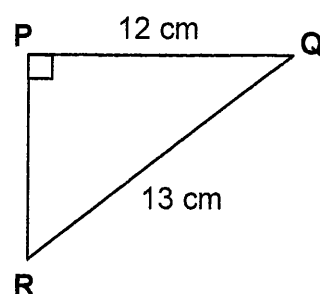
(b) Using as much of the information given below as necessary, find the value of $\sqrt{0.07}$.

[$\sqrt{7} = 2.646$, $\sqrt{70} = 8.367$]

Answer: [3]

11. (a) In triangle **PQR**, **PQ** = 12 cm and **QR** = 13 cm.

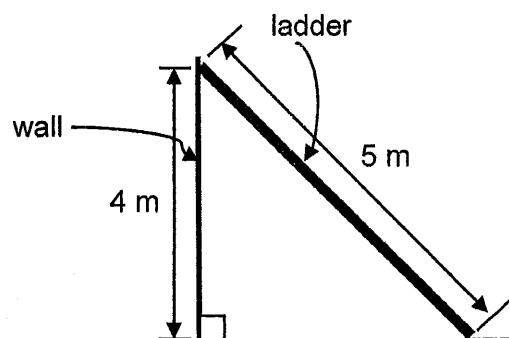
Find the length of **PR**.



Answer: cm [2]

- (b) A ladder of length 5 m is inclined against a wall of height 4 m.
Find the **angle** the ladder makes with the wall.

$$[\cos^{-1}\left(\frac{4}{5}\right) = 36.9^\circ ; \sin^{-1}\left(\frac{4}{5}\right) = 53.1^\circ ; \tan^{-1}\left(\frac{4}{5}\right) = 38.7^\circ]$$



Answer: Angle = ° [2]

12. The number of children per family living along a particular street is given in the table below.

No. of children	0	1	2	3	4
No. of families	5	4	6	3	2

For the above distribution of the number of children, find the

(a) mode.

Answer: [1]

(b) mean.

Answer: [3]

(c) median.

Answer: [3]

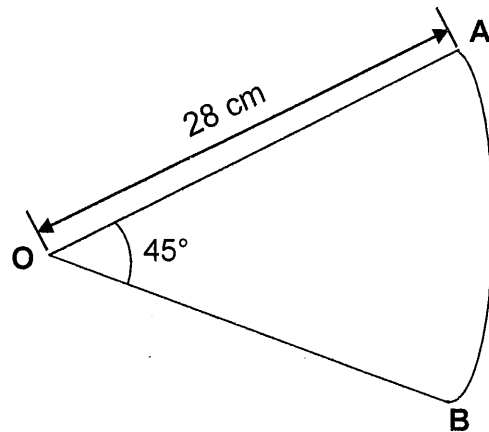
13. (a) Given that $3p = 2m - 5q$, express m in terms of p and q .

Answer: $m = \dots\dots\dots$ [2]

- (b) Find the equation of the line passing through the point $(-2, 5)$ and parallel to the line $x + 2y = 6$.

Answer: $\dots\dots\dots$ [3]

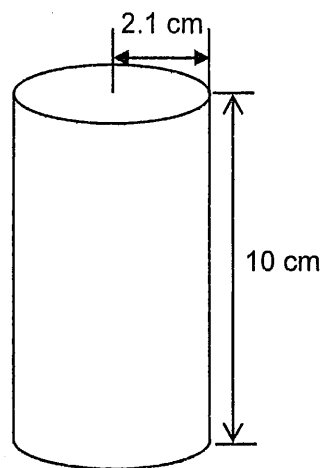
14. (a) The diagram shows sector **OAB** of a circle with centre **O** and radius 28 cm.
Given that $\widehat{AOB} = 45^\circ$ and taking $\pi = \frac{22}{7}$, calculate the **area** of sector **OAB**.



Answer: cm² [2]

- (b) Find the **volume** of a cylinder of radius 2.1 cm and height 10 cm.

[Take $\pi = \frac{22}{7}$]



Answer: cm³ [2]

15. (a) Find the H.C.F. of 32 and 72.

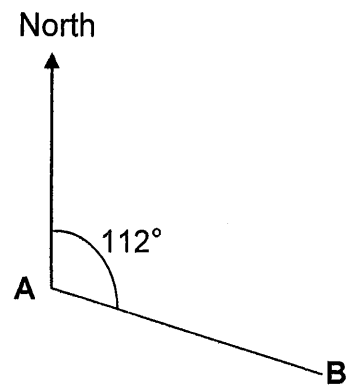
Answer: [2]

(b) Two boats leave a jetty at 14 00. The first one returns to the jetty every 25 minutes and the second one returns every 30 minutes.

At what **time** will the two boats next be at the jetty at the same time?

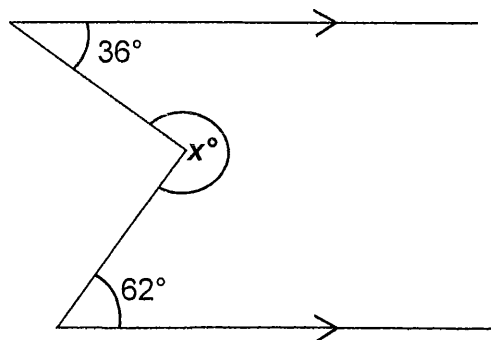
Answer: [4]

16. (a) The bearing of **B** from **A** is 112° . Calculate the bearing of **A** from **B**.



Answer: [3]

- (b) Find the value of x .



Answer: $x =$ [3]

17. (a) In a competition, the ratio of boys to girls is 3 : 2. If there are 12 more boys than girls, find the **total** number of students.

Answer: [3]

- (b) 5 men take 30 days to paint a building.

How many days would you expect **12 men** to take to paint the same building?

Answer: days [3]

18. (a) Expand and simplify $3(2m - 5n) - 4(3m - 2n)$.

Answer: [3]

(b) Solve the equation $x^2 - 4x - 21 = 0$.

Answer: $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [3]

19. A plane leaves London at 02 25 on a Wednesday and reaches Jakarta 16 hours 45 minutes later.

(a) What is the time in **London** when the plane reaches Jakarta?

Answer: [2]

(b) Jakarta is 6 hours ahead of London.
On which **day** and at what **time** does the plane land in **Jakarta**?

Answer: day [1]

time..... [2]

20. (a) A car travelling at 60 km/h takes $2\frac{1}{2}$ hours to travel a certain distance.
How many **minutes less** will the car take to cover the same distance if its speed is now 75 km/h ?

Answer: [3]

- (b) A bag contains 20 pens out of which x are red and the remaining are blue.
A pen is removed at random from the bag.

- (i) Write down, in terms of x , the probability of obtaining a red pen.

Answer: [1]

- (ii) If the probability of obtaining a **red** pen is equal to $\frac{1}{4}$, find the number of **blue** pens in the bag.

Answer: [3]