MATHS PLE TIPS

1. Read the instructions carefully. Each question has different instructions.
2. Read the question and understand it. If possible, highlight the key words.
3. Write neatly and organize your work well.
   Write from left to right.
4. Diagram work should be done in pencil. naming or writing points and angles in ink.
5. Use correct units.
6. Start with section A and begin by answering simple questions. Skip challenging questions.
7. All working should be shown in the correct space. Let children not lose marks due to omission of work.
8. Measure lines and angles accurately.
9. Equal signs and operation signs should be written e.g.

$$\begin{array}{r} 4\ 3 \\ \times\ 3 \\ \hline 129 \\ \hline \end{array}$$

The following guidance is particular to topics.

FRACTIONS

A separating bar is a must $\frac{3}{10}$ should be $\frac{3}{10}$.

- ✓ When a question is "simplify", it must be done to the lowest term.

$$\frac{5}{9} - \frac{2}{9} = \frac{\cancel{3}^{1}}{\cancel{9}_{3}}$$

$$= \frac{1}{3}$$

- ✓ If you get an improper fraction, change it to a mixed number. For decimal fractions, the answer should be in decimal. If it turns out to be a whole number leave it as it is.
- ✓ When expressing quantities in percentages, the percent symbol is a must.
  - Ratios must be simplified to the lowest term.
  - Written without units.
- ✓ When rounding off decimals, there mustn't be any digits written after the required place value.
  Round off 96.973 to the nearest tenths.

$$\begin{array}{r} 96.973 \\ +0.1 \\ \hline 97.0 \\ \hline \end{array}$$

NUMBER PATTERNS AND SEQUENCES

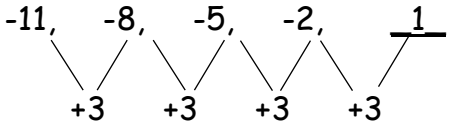
When finding L.C.M or G.C.F, all multiples or all factors must be listed without skipping any.

When finding G.C.F, only prime factors dividing all the numbers must be use e.g. Find the G.C.F of 12 and 18 (PLE 2012)

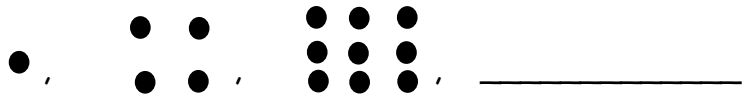
2	12	18
3	6	9
	2	3

G.C.F = 2 × 3
= 6

When finding the next number, the child should complete the pattern using the right method.
For example: find the next number in the sequence.

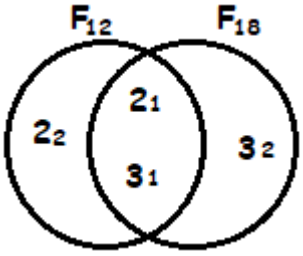


For patterns that have been illustrated, illustrations must be done.



If a Venn diagram has been drawn showing prime factors, the candidate must answer the questions, using the Venn diagrams. E.g.

Find the L.C.M of 12 and 18.



L.C.M = 2 × 2 × 3 x 3
= 36

A candidate must introduce the root symbol on the first step when finding square roots and cube roots e.g. Find the square root of $3\frac{1}{16}$ $\sqrt{3\frac{1}{16}}$

If fractions; the root symbol must cover both the numerator and the denominator. Still, roots from fractions must not be reduced e.g.

Find the square root of $\frac{36}{64}$ $\sqrt{\frac{36}{64}} = \frac{6}{8}$

For divisibility test, a child must follow the test but not try and error method.
e.g. Which of these numbers is divisible by 3?

140 and 5070

1 + 4 + 0 = 5

5 + 0 + 7 + 0 = 12

5070 is divisible by 3.

SET CONCEPTS:

Common members must be identified by ticking or circling them.

e.g. Give C = {2, (7), 10, 17}

D = {5, 6, (7), 11, 15}

C ∩ D = {7}

Curly brackets must be used to enclose the elements. Commas are a must. When finding the number of subsets, the child must substitute correctly. E.g.

Given set K = {g, m, v, z}, find the number of subsets in set K.

No. of subsets = 2^4 m_1

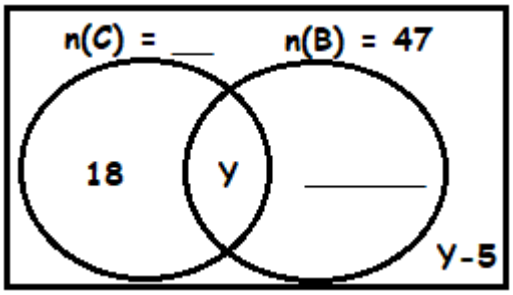
Also, the same applies when finding the number of elements in a given set when given the number of subsets e.g. $2^n = 16$ m_1

Candidates must list the subsets when tasked to do so other than finding the number of subsets.

For Venn diagrams, use the information given to complete it.

A candidate must make sure that every gap is filled because there is a mark for it. E.g.

$n(\mathcal{E}) = 76$



A candidate must use the right set symbols when answering a given question e.g.

P = {1, 3, 5, 7} and Q = {2, 3, 5, 7}. Find n(P∩Q)

P∩Q = {3,5,7} **not** n(P∩Q) = {3, 5, 7}.

A candidate must identify the required region corrrectly.

E.g. If 27 like MTC altogether,

If 18 do not like English at all,

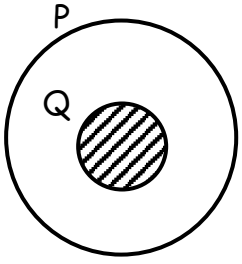
20 like science only,

5 play Hockey but not football,

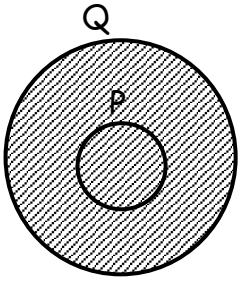
7 like at least two games; 8 like at most two subjects

A candidate must learn to shade region in subsets.

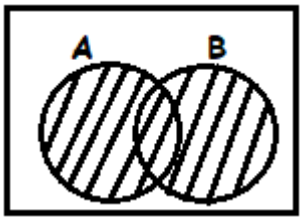
e.g. P∩Q = Q



P∪Q = Q



Shade either A or B (Requires one to shade union)



For whole numbers, place values must be written in plural form e.g Find the place value of 4 in 3 4 0,001

Ten thousands

Tens of thousands

When writing in words, candidates must show the place value periods.

e.g. Write 650,019 in words.

Thousands	Units
650	019

Six hundred fifty thousand nineteen.

When writing in Roman numerals, expansion is important.

Write 955 in Roman numerals.

955 = 900 + 50 + 5

For bases, re-grouping in bases must be shown.

Add: $1\,1\,0\,1_{two} + 1\,1\,1_{two}$

$1\,1\,0\,1_{two}$ 2 + 2 = 1r0

$+\,1\,1\,1_{two}$ 3 + 2 = 1r1

10100_{two}

The base must be written in words.

On operation of whole numbers

- ✓ A candidate must add or subtract numbers arranged vertically. Bar lines are a must to show equal signs.
- ✓ Correct arrangement of digits according to place values.
- ✓ When multiplying large numbers, long multiplication or latice method is a must especially for those numbers not ending in zeros. Find the product of 495 × 36
- ✓ When dividing large numbers, by other large numbers, multiples must be written or long division must be used.

$$\begin{array}{r} 14 \\ \hline 4970\not{0} \\ 3550 \\ \hline 1 \end{array}$$

$$\begin{array}{r|l} & 14 \\ \hline 3550 & 49700 \\ & 355 \\ \hline & 1420 \\ & 1420 \end{array}$$

M 355	
355	1
710	2
1065	3
1420	4

- ✓ A candidate should use brackets when expanding numbers using exponents.
  $789 = (7 \times 10^2) + (8 \times 10^1) + (9 \times 10^0)$

TIME

i) Write 24 hr clock system using 4 digits without the colon. (Reject with one dot). Also its units is hours. (hrs)

ii) Write the specific time in 12hr clock system e.g. p.m or a.m (3:45p.m – The colon is a must).

A candidate must write the duration in hours or hours and minutes.

e.g. how long was the activity that started at 9:30a.m and ended at 11:10a.m

HRS		MIN
11	:	10a.m
- 9	:	30a.m
1	:	40

1 hr 40 minutes or $1\frac{40}{60}$ hrs or $1\frac{2}{3}$ hrs

iii) A candidate must use correct units on time e.g. distance (km), Speed (km/hr or m/s or km/minute), Time (hrs)

iv) A candidate must convert time in minutes to hours when speed is to be given in km/hr. a leading statement is a must before conversions are done.

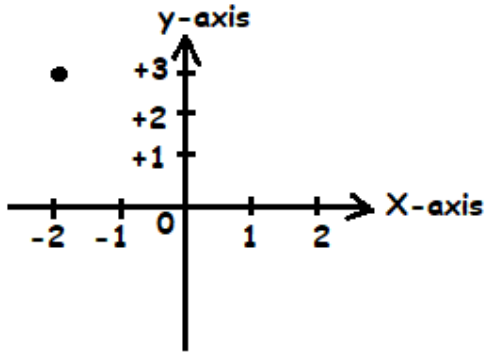
FOR DATA HANDLING

- A candidate must read the instructions carefully.
- Interpret the scale correctly refer PLE 2017 No. 19
  PLE 2008 No. 39

A candidate must complete the frequency table properly having shown the working.

Marks	Freq	Total
8	9	72
7	-	21
-	4	20

- A candidate must write the co-ordinates properly P (-2, 3)
- A candidate must indicate points plotted on the grid.



- For probability (dice or a coin or days or months) the sample space must be written and the expected chances identified by ticking or circling.

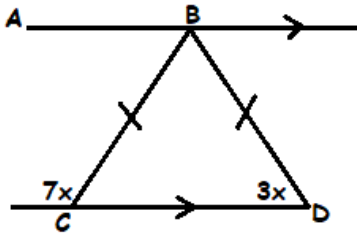
For Length, Mass and Capacity

- Metric conversion must be done after writing the correct leading statement.
  Convert 3.6m to cm
  1m = 100cm
  3.6m = $\frac{36}{1\cancel{0}} \times 10\cancel{0}$
  = 360cm
- Use correct formulae when finding missing side for example when gives area, circumference, volume, perimeter etc.
- A candidate must first harmonise the units before any operation is done. E.g How many 200gm pkts can be got from 2.6kg of salt?
  1kg = 1000gm
  2.6kg = $\frac{26}{1\cancel{0}} \times 100\cancel{0}$
  = 2600gm

  Number = $\frac{\cancel{2600}}{\cancel{200}}^{13}$
  = 13 packets
- A candidate should divide vol. of the big figure by the vol. of the small figure when finding tinfuls or cupfuls and packing to be done by diving dimension of the big figure by the ones on the small one.
  Refer to PLE 2015 No. 24, PLE 2011 No. 42

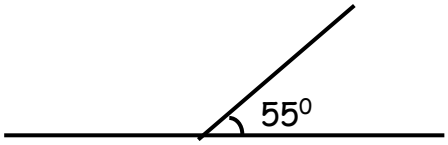
For Lines, Angles and Geometric figures/Geometric Construction

- A candidate must indicate information on the diagram for one to find the value of the unknown angle e.g.
  In the figure below line AB is parallel to CD and BCD is an isosceles triangle.



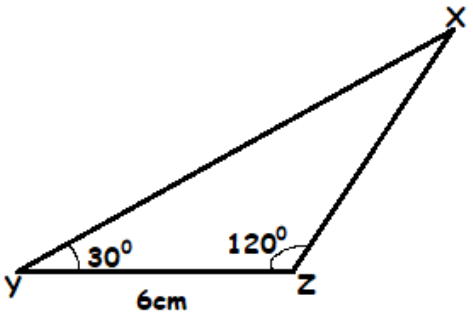
Find the value of x.

- The candidate had to indicate angle BCD = 3x on the diagram before forming the equation to find the value of x.
  $7x + 3x = 180^0$.
- A candidate must indicate the angle required of him or her to construct or to draw e.g. Using a protractor, draw an angle of 55^0 in the space below.

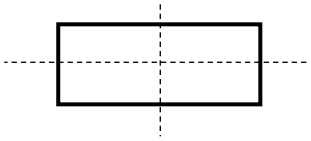


- A candidate must do the construction in pencil only. Writing dimensions and angles can be done in ink.

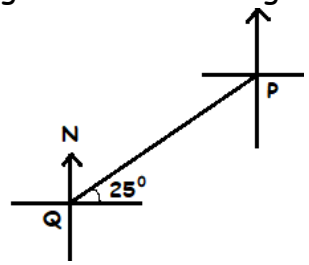
- A candidate must draw the sketch. All information given must be shown on the sketch. The sketch should be a reflection of the actual diagram especially angles. If an angle is 120^0, the sketch must reflect an obtuse angle. If an angle is 60^0, the sketch must reflect an acute angle.
  Refer to PLE 2005 No. 34 and PLE 2020 Number 25.
  Construct a triangle XYZ in which YZ = 6cm, angle XYZ = 30^0 and angle YZX = 120^0.



- A candidate must use the right instruments to draw or construct the diagram. If he/she is to use a protractor, it must be so.
- A candidate must draw the lines of folding symmetry proportionately using a ruler.
  E.g. Show all the lines of folding symmetry in the figure below.

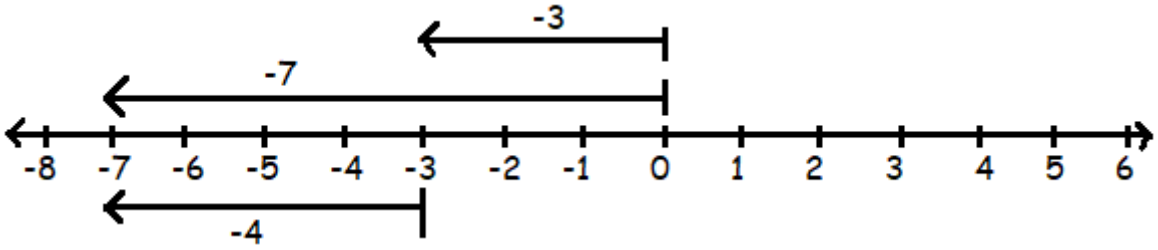


- A candidate must complete the diagram when reading/stating bearing of one place from another. e.g. Find the bearing of point Q and P in the diagram.



INTEGERS

- A candidate must write the integers on the arrows when working out on a number line. E.g. Work out $^{-}7 - {}^{-}3$ on the number line below.



- A candidate must simplify the signs during operation.
  Simplify: $^{-}6 - {}^{-}4$

  $^{-}6 - (^{-}4) = {}^{-}6 + 4$

  $= {}^{-}2$

- A candidate must write the finite system when dealing with finding the day after a given period of time. E.g. Today Monday, the workers on a farm are paid their salary. What day of the week will the workers' next pay be 30 days from today?

Sun	Mon	Tue	Wed	Thur	Fri	Sat
0	1	2	3	4	5	6

MONEY

✓ A candidate must complete the bill table in the correct spaces after showing the working. E.g. Refer to PLE 2013 No. 21 and Refer to PLE 2011 No. 32

✓ A candidate must use the right exchange rate when the exchange rate table has been drawn.
When given foreign currency, use the buying rate while when given local currency (Ug shs) Use the selling rate. Refer to PLE 2011 No. 35 and Refer to PLE 2015 No. 23

ALGEBRA

1. A candidate must observe the rule of multiplication of integers when opening brackets. e.g. Simplify
   $18x - 5(x + 7)$
   $18x - 5x - 35$
   $13x - 35$

2. A candidate must use brackets to show expressions treated as one term.
   e.g. Subtract $2k - 4$ from $4k + 5$
   $(4k + 5) - (2k - 4)$
   $4k + 5 - 2k + 4$
   $4k - 2k + 5 + 4$
   $2k + 9$

3. A candidate must draw a table of comparison when forming equations from word problems. e.g. A geometry set costs half as much as a book. A book costs sh. 600 more than a fountain pen. If the total cost of the three items is sh. 6,900. Find the cost of the geometry set.

Geometry set	Book	Fountain pen	Total
$\frac{1}{2}$ b	b	b-600	6900