

MEMORANDUM / MARKING GUIDELINE

GRADE 9 · TERM 3 · 2026

Geometry of 2D Shapes · Data Handling · Probability

TOTAL: 75 MARKS

DURATION: 1½ HOURS

EXAMINER: MR SIMONS

Each ✓ = one mark. Accept any correct alternative method.

SECTION A: MULTIPLE CHOICE [10 MARKS]

Question	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10
Answer	C	B	A	D	A	C	B	D	C	A

[10]

SECTION B – QUESTION 2: GEOMETRY OF 2D SHAPES [30]

2.1.1	$66^\circ + x^\circ + 2x^\circ = 180^\circ$ ✓ (sum of the angles of a triangle) $3x = 114$ ✓ $\therefore x = 38$ ✓	✓ angle sum of a triangle ✓ simplification ✓ answer	(3)
2.1.2	$\hat{B} = 38^\circ$ ✓ $\hat{C} = 2(38) = 76^\circ$ ✓ (Check: $66^\circ + 38^\circ + 76^\circ = 180^\circ$)	✓ size of $\hat{B}$ ✓ size of $\hat{C}$	(2)
2.1.3	Acute-angled triangle ✓ All three angles (66° , 38° and 76°) are less than 90° ✓	✓ acute-angled ✓ reason	(2)
2.2.1	$x = 55^\circ + 63^\circ$ ✓ (exterior angle of a triangle = sum of the two opposite interior angles) ✓ $\therefore x = 118^\circ$ ✓	✓ $55^\circ + 63^\circ$ ✓ reason: exterior angle ✓ answer	(3)
2.2.2	$\hat{P}\hat{R}\hat{Q} = 180^\circ - 118^\circ = 62^\circ$ ✓ (angles on a straight line) ✓ (Accept: $180^\circ - 55^\circ - 63^\circ = 62^\circ$)	✓ answer ✓ reason: angles on a straight line	(2)
2.3.1	$\hat{C} = 112^\circ$ ✓ The opposite angles of a parallelogram are equal ✓	✓ answer ✓ reason	(2)
2.3.2	$\hat{B} = 180^\circ - 112^\circ = 68^\circ$ ✓ Co-interior angles, $AD \parallel BC$ ✓ (Accept: adjacent angles of a parallelogram are supplementary)	✓ answer ✓ reason: co-interior angles	(2)
2.3.3	The diagonals bisect each other ✓ (Accept any ONE correct property)	✓ one correct property	(1)

2.4.1	In $\triangle ABC$ and $\triangle DEF$: $AB = DE$ (given) ✓ $\hat{B} = \hat{E}$ (given) ✓ $BC = EF$ (given) ✓ $\therefore \triangle ABC \equiv \triangle DEF$ (SAS / SHS) ✓	✓ $AB = DE$ ✓ $\hat{B} = \hat{E}$ ✓ $BC = EF$ ✓ SAS	(4)
2.4.2	$\hat{D} = 47^\circ$ ✓ (corresponding angles of congruent triangles)	✓ answer	(1)
2.5.1	Scale factor = $\frac{12}{6} = 2$ ✓	✓ scale factor	(1)
2.5.2	$QR = 8 \times 2$ ✓ $\therefore QR = 16 \text{ cm}$ ✓	✓ 8×2 ✓ answer	(2)
2.5.3	$\hat{P} = 42^\circ$ ✓ The corresponding angles of similar triangles are equal ✓	✓ answer ✓ reason	(2)
2.6	Exterior angle = $180^\circ - 140^\circ = 40^\circ$ ✓ $n = \frac{360^\circ}{40^\circ}$ ✓ $\therefore n = 9$ sides ✓	✓ exterior angle ✓ dividing 360° by 40° ✓ answer	(3)
		TOTAL	[30]

QUESTION 3: DATA HANDLING [20]

3.1.1	Mean = $\frac{4+5+6+7+7+7+8+8+9+9}{10} = \frac{70}{10}$ ✓ = 7 ✓	✓ dividing the sum by 10 ✓ answer	(2)
3.1.2	The two middle marks are the 5th and 6th: 7 and 7 ✓ Median = 7 ✓	✓ the two middle marks ✓ answer	(2)
3.1.3	Mode = 7 ✓ (it appears three times)	✓ mode	(1)
3.2.1	10 learners ✓	✓ answer	(1)
3.2.2	Soccer ✓	✓ answer	(1)
3.2.3	25% of 40 = 10 learners ✓ Soccer 14 and Netball 10 both reach 10 ✓ Athletics 8 and Swimming 8 are BELOW 10 ✓ $\therefore$ Athletics and Swimming will NOT be kept ✓ (Accept percentages: 35%, 25%, 20%, 20%)	✓ 25% of 40 = 10 ✓ soccer and netball reach 10 ✓ athletics and swimming below 10 ✓ conclusion	(4)
3.3.1	150 – 159 ✓ (highest frequency, 8)	✓ modal interval	(1)
3.3.2	The 10th and 11th values are the middle ones; $3 + 8 = 11$ ✓ $\therefore$ the median lies in 150 – 159 ✓	✓ the middle values ✓ the interval	(2)

3.3.3	$3 + 8 = 11$ learners ✓	✓ answer	(1)
3.3.4	$3 + 8 + 5 + 4 = 20$ learners ✓	✓ answer	(1)
3.4.1	A sample ✓	✓ a sample	(1)
3.4.2	The 30 learners all come from ONE class, so they do not represent all 900 learners ✓ (Accept: the sample is too small / it is biased)	✓ one valid reason	(1)
3.4.3	It takes learners from EVERY class, so all groups are represented ✓ The sample is also larger (150 learners instead of 30) ✓ (Accept any TWO reasonable points)	✓ every class represented ✓ a larger sample	(2)
		TOTAL	[20]

QUESTION 4: PROBABILITY [15]

<i>Total number of marbles = $4 + 3 + 5 = 12$</i>			
4.1.1	$P(\text{blue}) = \frac{3}{12}$ ✓ = $\frac{1}{4}$ ✓	✓ 3 out of 12 ✓ simplest form	(2)
4.1.2	$P(\text{not green}) = \frac{4+3}{12}$ ✓ $= \frac{7}{12}$ ✓ (Accept $1 - \frac{5}{12}$)	✓ (4 + 3) out of 12 ✓ answer	(2)
4.1.3	Let n = the number of blue marbles added. $\frac{3+n}{12+n} = \frac{1}{2}$ ✓ $2(3+n) = 12+n \therefore 6+2n = 12+n$ ✓ $\therefore n = 6$ blue marbles ✓ (Check: 9 out of 18 = $\frac{1}{2}$. Accept a correct answer found by systematic trial.)	✓ equation in n ✓ simplification ✓ answer	(3)
4.2.1	$(a) = 40 - 26 = 14$ ✓	✓ answer	(1)
4.2.2	$P = \frac{26}{80}$ ✓ = $\frac{13}{40}$ ✓	✓ 26 out of 80 ✓ simplest form	(2)
4.2.3	Only the 40 girls are considered ✓ $P = \frac{14}{40} = \frac{7}{20}$ ✓	✓ only the 40 girls ✓ answer	(2)
4.3.1	$2 \times 6 = 12$ outcomes ✓	✓ 2×6	(1)
4.3.2	Favourable outcomes: H5 and H6 ✓ $P = \frac{2}{12} = \frac{1}{6}$ ✓	✓ favourable outcomes ✓ answer	(2)
		TOTAL	[15]

TOTAL: 75 MARKS**ANALYSIS OF COGNITIVE LEVELS**

CAPS Senior Phase (Grades 7–9) Mathematics weighting.

Cognitive level	Marks	% of paper	CAPS target	Questions
Level 1: Knowledge	17	23%	25%	1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.9, 1.10, 2.3.3, 3.1.3, 3.2.1, 3.2.2, 3.3.1, 3.3.4, 3.4.1, 4.3.1
Level 2: Routine procedures	31	41%	45%	1.5, 2.1.1, 2.1.2, 2.2.1, 2.3.1, 2.3.2, 2.4.2, 2.5.1, 2.5.2, 2.5.3, 3.1.1, 3.1.2, 3.3.3, 4.1.1, 4.1.2, 4.2.1, 4.2.2
Level 3: Complex procedures	17	23%	20%	2.1.3, 2.2.2, 2.4.1, 2.6, 3.3.2, 4.2.3, 4.3.2
Level 4: Problem solving	10	13%	10%	3.2.3, 3.4.2, 3.4.3, 4.1.3
TOTAL	75	100%	100%	