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FINAL

KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICS
SEPTEMBER 2025
MARKING GUIDELINE

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MARKS: 75

This marking guideline consists of 7 pages.

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QUESTION 1

Consider the sequence: 17 ; 15 ; 13 ; ...			
1.1.1	$T_4 = 11$	✓A answer	(1)
1.1.2	$T_n = -2n + 19$ **OR** $T_n = 19 - 2n$	✓A $-2n$ ✓A $+19$	(2)
1.1.3	$-71 = -2n + 19$ $-90 = -2n$ $n = 45$ $\therefore T_{45} = -71$	✓CA equating ✓ CA answer $(n \in \quad)$	(2)
1.2	$4x + 7 - (3x - 2) = 2x - 5 - (4x + 7)$ $x + 9 = -2x - 12$ $3x = -21$ $\therefore x = -7$	✓ A equating 1st diff. ✓ CA simplification ✓ CA answer	(3)
1.3.1	$T_{67} = 9$	✓ A answer	(1)
1.3.2	$T_n = 3n + 2$ $T_{250} = 3(250) + 2$ $\therefore T_{500} = 752$	✓ A $3n + 2$ ✓CA subst $n = 250$ ✓CA answer	(3)
1.4	Numerator: $T_k = 4k + 6$ Denominator: $T_p = 5p + 3$ $\therefore T_n = \frac{4n + 6}{5n + 3}$ **Answer Only: Full Marks.**	✓A numerator ✓A denominator ✓CA answer	(3)
			[15]

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QUESTION 2

2.1.1	$A = P(1+i)^n$ $A = 25000(1+0,0825)^9$ $A = \text{R}51025,96$ OR $A = P\left(1+\frac{r}{100}\right)^n$ $A = 25000\left(1+\frac{8,25}{100}\right)^9$ $A = \text{R}51025,96$	✓A formula ✓A substitution ✓CA answer	(3)
2.1.2	$A = P(1+in)$ $A = 51025,96[1+(0,06)(3)]$ $A = \text{R}\,60\,210,63$ **OR** $A = P\left(1+\frac{nr}{100}\right)$ $A = 51025,96\left(1+\frac{(6)(3)}{100}\right)$ $A = \text{R}\,60\,210,63$ **OR** $I = p \times i \times n$ $= 51025,96 \times 0,06 \times 3$ $= \text{R}9184,67$ $\therefore A = P + I$ $= 51025,96 + 9184,67$ $= \text{R}60210,63$	✓A formula ✓CA substitution ✓CA answer	(3)
2.2	$P = 64700000(1+0,025)^{-3}$ $P = 60080381$ people **OR** $64700000 = P[1+(0,025)]^3$ $P = 60080381$ people **Penalise 1 mark if** $P \notin$	✓A substitution ✓CA answer	(2)

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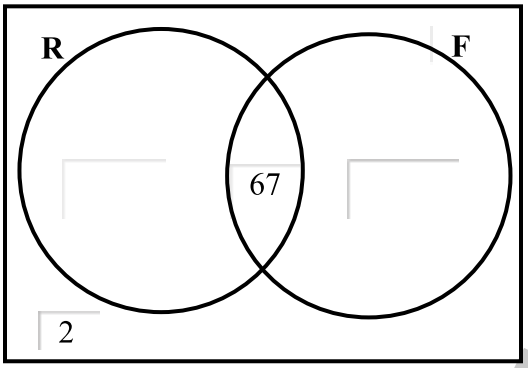
2.3	$£1 = R23,52 \times \frac{\$1}{R18,16}$ $£1 = \$1,30$ **OR** $\$1 = R18,16 \times \frac{£1}{R23,52}$ $\$1 = £0,77$	✓A product ✓CA answer	(2)
			[10]

QUESTION 3

3.1.1	$P(A) + P(B) = 1$	✓A 1	(1)
3.1.2(a)	$P(A \text{ and } B) = 0$	✓A 0	(1)
3.1.2(b)	$P(A) = 0,45$	✓A answer	(1)
3.2.1	$18 - x + x + 27 - x + 4 = 33$ $49 - x = 33$ $x = 16$ **OR** $18 - x + x + 27 - x + 4 = 33$ $49 - x = 33$ $x = 16$	✓A equation ✓CA simplification ✓CA answer $(x \in \quad)$	(3)
3.2.2(a)	$P(none) = \frac{4}{33}$	✓A answer	(1)
3.2.2(b)	$P(N\ only) = \frac{2}{33}$	✓CA 2 ✓CA answer	(2)

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3.3.1		✓A 44 ✓A 67 ✓A 7 ✓A 2	(4)
3.3.2	$P((\text{not R}) \text{ and F}) = \frac{7}{120}$	✓CA 7 ✓A 120 (denom)	(2)
			[15]

QUESTION 4

4.1.1	$a = 35$ (also accept $a = 57,2$) $b = 715$ $c = 9$	✓A ✓A ✓A	(3)
4.1.2	Estimated mean $= \frac{3350}{60}$ $\left(\text{also accept } \frac{3550}{60}\right)$ $= 55,83$ $(= 59,17)$ **Answer Only: Full Marks.**	✓CA substitution ✓CA answer	(2)
4.1.3	$40 \leq m < 50$	✓CA answer	(1)
4.1.4	$50 \leq m < 60$	✓CA answer	(1)
4.2.1	Median $= \frac{43 + 45}{2}$ $= 44$	✓A answer	(1)
4.2.2	IQR $= 61 - 33$ $= 28$	✓A Q_3 ✓A Q_1 ✓CA answer	(3)

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4.2.3	$\frac{30+33+33+x+43+45+55+61+78+80}{10}=49,5$ $495=458+x$ $x=37$	✓A sum divided by 10 ✓A equating to 49,5 ✓CA answer	(3)
			[14]

QUESTION 5

5.1(a)	amplitude $=2$	✓A answer	(1)
5.1(b)	period $=360°$	✓A answer	(1)
5.1(c)	minimum value $=-1$	✓A answer	(1)
5.2	$f(180°)=2$ $g(180°)=1$ $\therefore f(180°)-g(180°)=1$ **Answer Only: Full Marks.**	✓A $f(180°)=2$ ✓CA answer (based on $f(180°)$)	(2)
5.3	$0°\le x\le 90°$ or $270°\le x\le 360°$ **OR** $x\in[0°\ ;\ 90°]\cup[270°\ ;\ 360°]$	✓A $0°\le x\le 90°$ ✓A $270°\le x\le 360°$ ✓A both have correct notation **OR** ✓A $x\in[0°\ ;\ 90°]$ ✓A $\cup[270°\ ;\ 360°]$ ✓A both have correct notation	(3)
5.4	$h(x)=-(\sin x+1)+3$ $h(x)=-\sin x-1+3$ $h(x)=-\sin x+2$ $\therefore 1\le y\le 3$ **OR** $y\in[1\ ;\ 3]$ **Answer Only: Full Marks.**	✓A $h(x)=-\sin x+2$ ✓CA interval ✓A notation	(3)
			[11]

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QUESTION 6

6.1	$\tan 30° = \frac{WE}{15}$ $15\tan 30° = WE$ $5\sqrt{3}\text{ m} = WE$ $\quad (\text{accept } WE = 8,66\text{ m})$	✓A $\tan 30° = \frac{WE}{15}$ ✓A answer	(2)
6.2	$WR = 7,5\text{ m}$ $\cos\theta = \frac{WR}{WT}$ $\cos\theta = \frac{7,5}{9}$ $\theta = 33,56°$	✓A length of WR ✓CA substitution ✓CA answer	(3)
6.3	$TR^2 = 9^2 - 7,5^2$ Pythag $TR = \frac{3\sqrt{11}}{2}$ $\text{Area} = \frac{1}{2}b.h$ $= \frac{1}{2}(15)\left(\frac{3\sqrt{11}}{2}\right)$ $= 37,31\text{ m}^2$	✓A correct sub Pythag ✓CA length of TR ✓A formula ✓CA subst ✓CA answer	(5)
			[10]

TOTAL: 75 MARKS

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