KWAZULU-NATAL PROVINCE

EDUCATION

REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICS

COMMON TEST

SEPTEMBER 2023



MARKING GUIDELINE

MARKS: 75

This marking guideline consists of 7 pages.

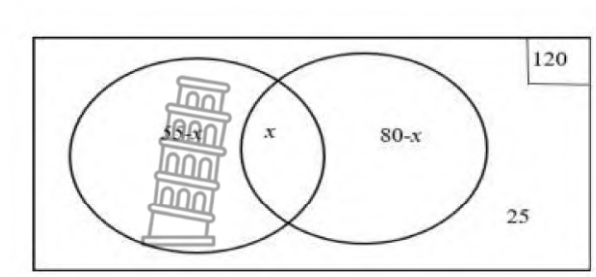
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QUESTION 1

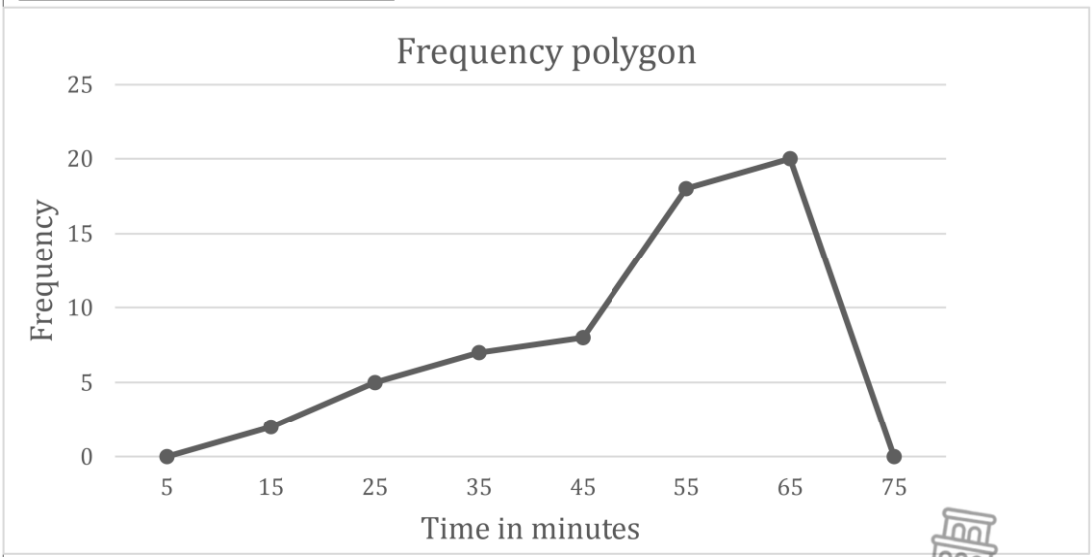
1.1.1	$Deposit = R12000$	✓Answer	(1)
1.1.2	$Loan = R48000$ $A = P(1+in)$ $A = 48000(1+0{,}22\times 5)$ $A = R100800$ $Monthly\ instalments = \frac{100800}{60} + R120$ $=$R1800	✓Loan value ✓R100800 ✓60 ✓R1800	(4)
1.2	Let the initial investment be $= x$ Final investment $= 2x$ $A = P(1+in)$ $2x = x(1+0{,}075\times n)$ $2 = 1+0{,}075n$ $n = 13{,}33$ $n \approx 14 years$	✓$A = P(1+in)$ ✓$2x = x(1+0{,}075\times n)$ ✓$n \approx 14 years$	(3)
1.3	$A = P(1+i)^n$ $16 = 11{,}5(1+i)^8$ $i = \sqrt[8]{\frac{32}{23}} - 1$ $r = 4{,}21\%$ pa	✓ $16 = 11{,}5(1+i)^8$ ✓ $i = \sqrt[8]{\frac{32}{23}} - 1$ ✓ answer	(3)
1.4.1	R 2005	✓R 2005	(1)
1.4.2	£98,21	✓£98,21	(1)
1.4.3	R5855 = €292,02	✓R5855 ✓€292,02	(2)
			[15]

Stanmorephysics

QUESTION 2

2.1.1		✓120 ✓$55-x$ ✓$80-x$ ✓25	(4)
2.1.2	$55-x+x+80-x+25=120$ $\therefore x=40$	✓$55-x+x+80-x+25=120$ ✓$x=40$	(2)
2.1.3a	$P(M)only=0,125$	✓0,125 or $\frac{1}{8}$	(2)
2.1.3b	$P(G)'=0,333$	✓✓$P(G)'=0,333$	(2)
2.1.3c	$P(MorG)=0,792$	✓✓$P(MorG)=0,792$	(2)
2.1.3d	$P(MandG)=0,667$	✓✓$P(MandG)=0,667$	(2)
2.2.1	$s=1$	✓$s=1$	(1)
2.2.2	$q=0,8-0,6$ $=0,2$ $r=0,1$	✓$q=0,2$ ✓$r=0,1$ ✓ subtraction method	(3)
2.2.3	$0,2+0,6+0,1+t=1$ $t=0,1$	✓$0,2+0,6+0,1+t=1$ ✓$t=0,1$	(2)
2.2.4	$P(D)'=0,2+0,1$ $P(D)'=0,3$ **OR** $P(D)'=1-P$ $(D)P(D)'=0,3$	✓$P(D)'=0,2+0,1$ ✓P $(D)'=0,3$ **OR** ✓$P(D)'=1-P(D)$ ✓$P(D)'=0,3$	(2)
2.2.5	$P(atleast1)=0,2+0,6+0,1$ $P(atleast1)=0,9$ **OR** $P(MorD)=0,8+0,7-0,6$ $P(MorD)=0,9$	✓$P(atleast1)=0,2+0,6+0,1$ ✓P $(atleast1)=0,9$ **OR** ✓$P(MorD)=0,8+0,7-0,6$ ✓$P(MorD)=0,9$ **Answer only: full marks**	(2) **[24]**

QUESTION 3

3.1.1	$a = 1; c = 20; d = 29$	✓$a = 1$ ✓$c = 20$ ✓$d = 29$	(3)
3.1.2	Range = maximum - minimum Maximum = 38 + 1 maximum = 39	✓maximum = 38 +1 ✓maximum = 39 **Answer only: full marks**	(2)
3.1.3	$Q_1 = Q_3 - IQR\ Q_1 = 29$ $-18\ Q_1 = 11$	✓$Q_1 = 29 - 18$ ✓$Q_1 = 11$	(2)
3.1.4	Yes, I agree with the statement. The average was $\frac{20}{50}$ and the highest mark was $\frac{39}{50}$	✓agree ✓average ✓highest mark	(3)
3.2.1	$60 < n \leq 70$	✓✓answer	(2)
3.2.2	**Midpoints**: 15, 25, 35, 45, 55, 65	✓first 3 numbers ✓last 3 numbers	(2)
3.2.3		✓end points ✓✓✓every two correct point	(4)

3.2.4	Estimated mean = $\frac{2\times15+5\times25+7\times35+8\times45+18\times55+20\times65}{63}$ $= \frac{3050}{63}$ $= 48{,}41$	✓numerator ✓ denominator ✓ simplification ✓ answer	(4)
			[22]

QUESTION 4

4.1.1	$A\hat{M}B = 90° + 21° = 111°$ [Ext $\angle$ of Δ]	✓111° ✓Ext $\angle$ of Δ	(2)
4.1.2	$\tan 21° = \frac{MB}{12}$ $MB = 4{,}61$ units	✓✓ $\tan 21° = \frac{MB}{12}$ ✓ $MB = 4{,}61$	(3)
4.1.3	$AB = 2MB$ $AB = 2(4{,}61)$ $AB = 9{,}22$units..OR $AB = 9.21$ units	✓ $AB = 2(4{,}61)$ ✓ $AB = 9{,}22$ **Answer only: full marks**	(2)
4.1.4	$\tan A\hat{C}B = \frac{9{,}21}{12}$ $A\hat{C}B = 37{,}51°$ $A\hat{C}M = 37{,}51° - 21°$ $= 16{,}51°$ **OR** $\tan A\hat{C}B = \frac{9{,}22}{12}$ $A\hat{C}B = 37{,}54°$ $A\hat{C}M = 37{,}54° - 21°$ $= 16{,}53°$	✓ $\tan A\hat{C}B = \frac{9{,}21}{12}$ ✓$A\hat{C}B = 37{,}51°$ ✓$A\hat{C}M = 37{,}51° - 21°$ ✓ $= 16{,}51°$ ✓ $\tan A\hat{C}B = \frac{9{,}22}{12}$ ✓$A\hat{C}B = 37{,}54°$ ✓$A\hat{C}M = 37{,}54° - 21°$ ✓ $= 16{,}53°$	(4)

4.1.5	$AC^2 = BC^2 + AB^2$ (Pythagoras) $AC = \sqrt{12^2 + 9{,}21^2}$ $AC = 15{,}13$ units **OR** $\cos A\hat{C}B = \frac{9{,}21}{AC}$ $AC = 15{,}13$ units **OR** $AC^2 = BC^2 + AB^2$ (Pythagoras) $AC = \sqrt{12^2 + 9{,}22^2}$ $AC = 15{,}13$ units **OR** $\cos A\hat{C}B = \frac{9{,}22}{AC}$ $AC = 15{,}13$ units	✓$AC^2 = BC^2 + AB^2$ ✓$AC = \sqrt{12^2 + 9{,}21^2}$ ✓$AC = 15{,}13$ units ✓✓$\cos A\hat{C}B = \frac{9{,}21}{AC}$ ✓$AC = 15{,}13$ units ✓$AC^2 = BC^2 + AB^2$ ✓$AC = \sqrt{12^2 + 9{,}22^2}$ ✓$AC = 15{,}13$ units ✓✓$\cos A\hat{C}B = \frac{9{,}22}{AC}$ ✓$AC = 15{,}13$ units	(3)
			[14]
		TOTAL:	**[75]**

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