Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICS

COMMON TEST

SEPTEMBER 2022

MARKING GUIDELINE

Stanmorephysics.com

MARKS: 75
TIME: 1½ hours

NOTE:

- If a candidate answered a QUESTION TWICE, mark only the FIRST attempt.
- If a candidate crossed out an answer and did not redo it, mark the crossed-out answer.
- Consistent accuracy applies to ALL aspects of the marking guidelines.
- Assuming values/answer in order to solve a problem is unacceptable.

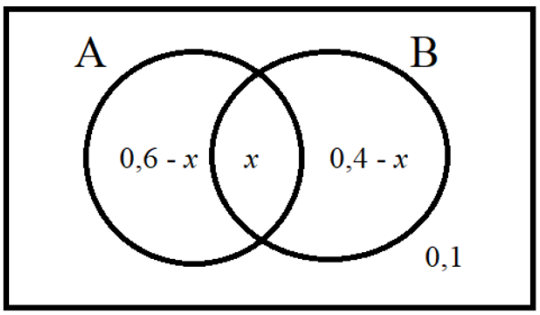
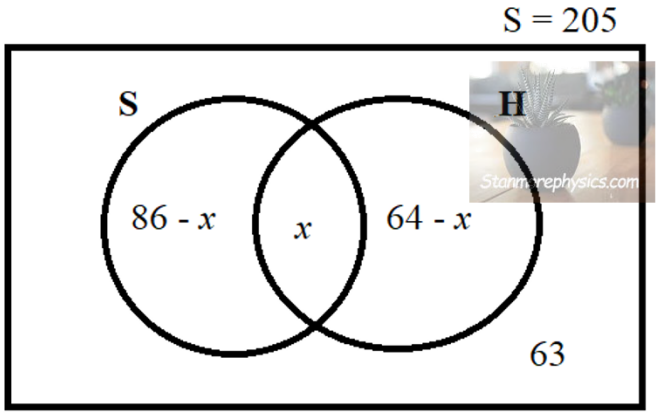
This marking guideline consists of 6 pages.

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QUESTION 1

1.1.1	$Deposit: \quad \frac{11}{100} \times R7999 = R879,89$ $Balance: \quad R7999 - R879,89 = R7119,11$	✓ deposit ✓ answer	(2)
1.1.2	$A = P(1+in)$ $A = R7119,11(1+0,2\times 4)$ $A = R12814,40$	✓ $A = P(1+in)$ ✓ $(1+0,2\times 4)$ ✓ answer	(3)
1.1.3	$Monthly\ \ payment: \quad \frac{R12814,40}{48} = R266,97$ $+\ additional: \quad +\ R42\ per\ \ month$ $\therefore R266,97 + R42 = R308,97\ per\ \ month$	✓ adding services ✓ answer	(2)
1.2	$4\ nights = 4\times \$450 = \$1800$ $\$1 = R16,77$ $\therefore \$1800 = R30186$	✓ (for $R1800$) ✓ answer	(2)
1.3	$A = P(1+i)^n$ $P = \frac{A}{(1+i)^n}$ $P = \frac{95798,35}{(1+0,0825)^7}$ $P = R55000$	✓ substitution into correct formula ✓ $\frac{95798,35}{(1+0,0825)^7}$ ✓ CA	(3)
1.4.1	$A = P(1+i)^n$ $A = 4500(1+0,075)^4$ $A = R6009,61$ $\therefore \quad R6009,61 + R2500 = R8509,61$	✓ substitution into correct formula ✓ $R6009,61$ ✓ CA	(3)
1.4.2	$A = P(1+i)^n$ $A = 8509,61(1+0,075)^6$ $A = R13132,89$	✓ substitution into correct formula ✓ $n = 6$ ✓ CA	(3)
			[18]

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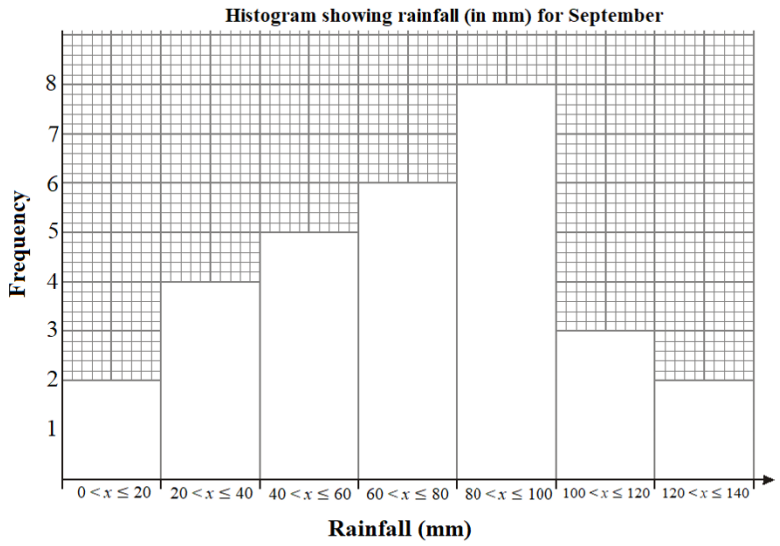
2.1.1	$P(blue)=\frac{5}{6}$ $\therefore \frac{5}{6}\times 102=85$	✓ method ✓ answer	(2)
2.1.2	$\frac{1}{6}(\text{yellow})\rightarrow 26$ $\therefore \frac{5}{6}(blue)\rightarrow 26\times 5=130$ *OR* $\frac{1}{6}\times x=26$ $\therefore x=156$ $\therefore blue=156-26=130$	✓ method ✓ answer ✓ method ✓ answer	(2) (2)
2.2.1	P(A or B) = **1**	✓ answer	(1)
2.2.2	P(A and B) = **0**	✓ answer	(1)
2.3	$P(A\ and\ B)=P(A)+P(B)-P(A\,or\,B)$ $P(A\ and\ B)=0,6+0,4-0,9$ $P(A\ and\ B)=0,1$ OR 	✓ method: formula ✓ substitution ✓ answer ✓ method: Venn diagram ✓ solving regions ✓ answer	(3) (3)
2.4.1		✓ $86-x$ ✓ 63 *outside* ✓ $64-x$	(3)

2.4.2	$(86-x)+x+(64-x)+63=205$ $213-x=205$ $x=8$	✓ ✓	equation answer	(2)
2.4.3	$P(hockey\ only)=\frac{56}{205}$	✓ ✓	56 205	(2)
2.5	P(B') = 0,6	✓	answer	(1)
				[17]

QUESTION 3

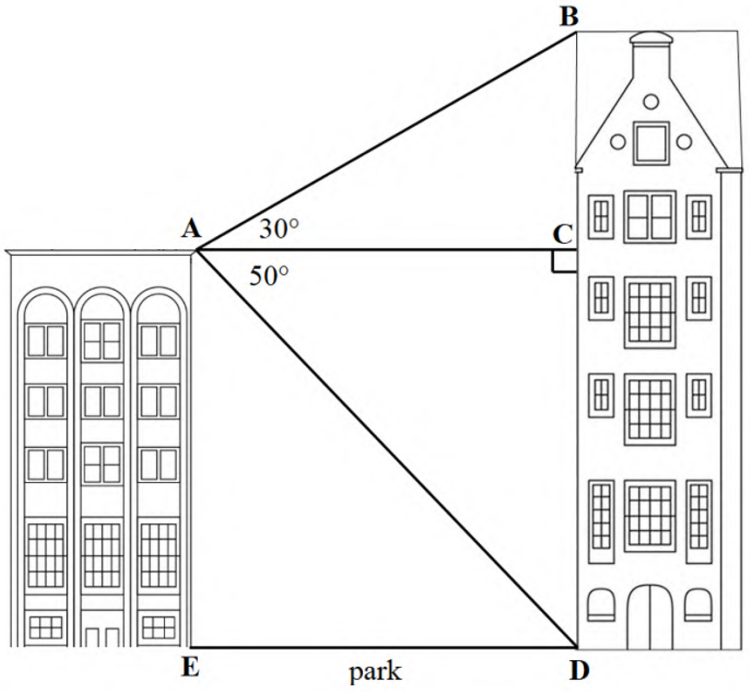
3.1	$dBD=\sqrt{(5+3)^2+(3+1)^2}$ $dBD=4\sqrt{5}$	✓ ✓	substitution into correct formula answer	(2)
3.2	$E:\left(\frac{3-1}{2};\frac{5-3}{2}\right)$ $E(1;1)$	✓ ✓	substitution into correct formula answer	(2)
3.3	$mAE=\frac{4-1}{-5-1}=-\frac{1}{2}$ $mBD=\frac{5-(-3)}{3-(-1)}=2$ $mAE\times mBD=-1$ $\therefore AE\perp BD$	✓ ✓ ✓ ✓	substitution into correct formula mAE mBD $mAE\times mBD=-1$	(4)
3.4	$y=mx+c$ $m=2$ ($y=2x+c$ $sub\ A(-5;4):\ 4=2(-5)+c$ $c=14$ $y=2x+14$	✓ ✓ ✓	$m=2$ $sub\ A(-5;4)$ $c=14$	(3)
3.5	$dAE=\sqrt{(-5-1)^2+(4-1)^2}=3\sqrt{5}$ $Area\ of\ \Delta ABD=\frac{1}{2}BD\times AE$ $Area\ of\ \Delta ABD=\frac{1}{2}\times 4\sqrt{5}\times 3\sqrt{5}$ $Area\ of\ \Delta ABD=30\ units^2$	✓ ✓ ✓	$length\ of\ AE$ substitution into correct formula answer	(3)
3.6	$A\rightarrow D:\quad (x+4\ ;\ y-7)$ $B\rightarrow C:\quad (3+4\ ;\ 5-7)$ $\therefore C(7\ ;-2)\quad by\ symmetry$	✓ ✓	method answer	(2)
				[16]

QUESTION 4

4.1.1	$A = 2$ $B = 50$ $C = 330$	✓ ✓ ✓	answer answer answer	(3)
4.1.2	$estimated\ mean = \frac{20 + 120 + 250 + 420 + 720 + 330 + 260}{30}$ $= \frac{2120}{30}$ $= 70{,}67\ mm$	✓ ✓ ✓	2120 30 answer	(3)
4.1.3		✓ ✓ ✓	shape *y*-axis *x*-axis	(3)
4.1.4a	$60 < x \leq 80$	✓	answer	(1)
4.1.4b	$80 < x \leq 100$	✓	answer	(1)
4.1.4c	$80 < x \leq 100$	✓	answer	(1)
4.2.1	Lowest: 25% Highest 95%	✓	both values	(1)
4.2.2	75%	✓	answer	(1)
4.2.3	64%	✓	answer	(1)
4.2.4	25%	✓	answer	(1)
4.2.5	IQR = 80% – 31% IQR = 49%	✓ ✓	80% – 31% answer	(2)
				[18]

QUESTION 5

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5.1	$A\hat{D}E = 50°$ (alt ∠s; AC□	✓ answer	(1)
5.2	In ΔADE: $\tan 50° = \frac{AE}{45}$ $AE = 53,63\,m$ In ΔABC: $\tan 30° = \frac{BC}{45}$ $BC = 25,98\,m$ $\therefore BD = 53,63\,m + 25,98\,m = 79,61\,m$	✓ $\tan 50°$ ✓ $AE = 53,63\,m$ ✓ $\tan 30°$ ✓ $AE = 53,63\,m$ ✓ CA	(5)
			[6]
		TOTAL:	**[75]**

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