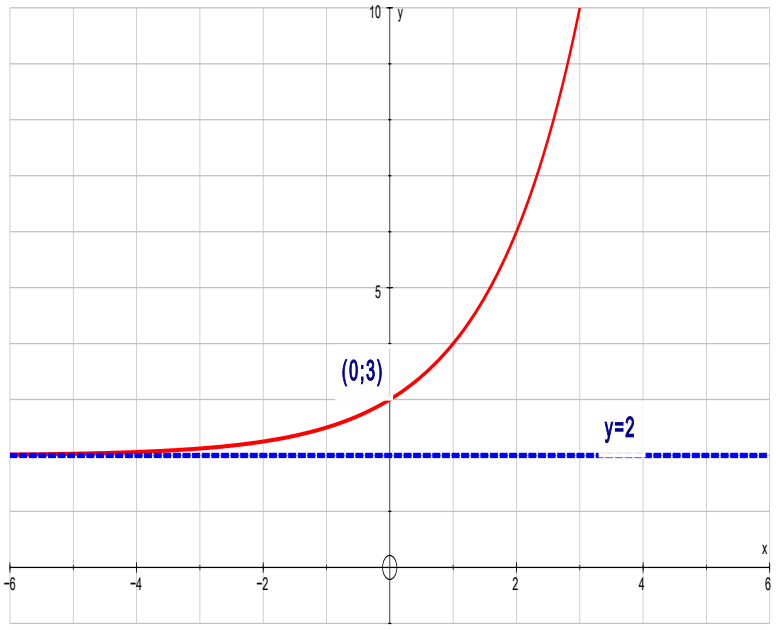
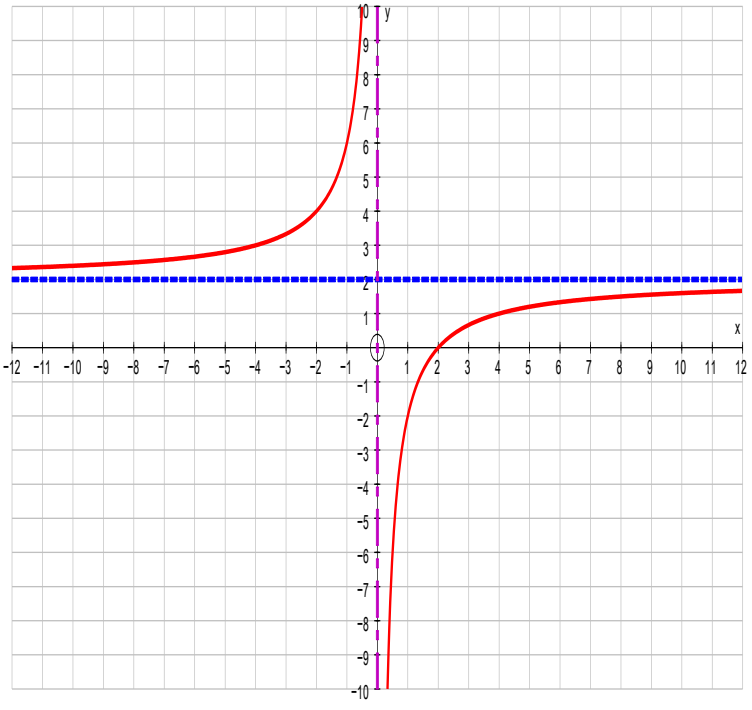
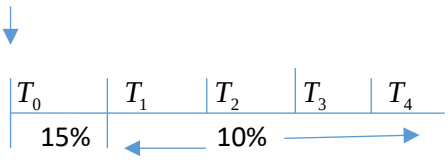
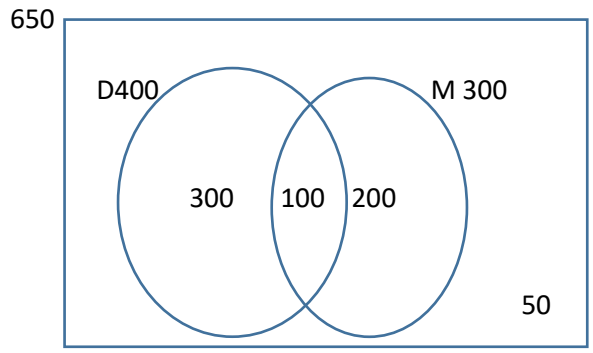
MEMO GR 10 PAPER 1 NOVEMBER 2021

Question 1			√√√	
1.1.	1.1.1	$9x^2-12x+4-2x+10$ $=9x^2-14x+14$	√ bracket 1 √ bracket 2 √ answer	(3)
	1.1.2	$4x^4-\frac{1}{x^4}$	√√ each term	(2)
1.2.		$x<3$	√√ value and sign	(2)
				[7]
Question 2				
2.1.	2.1.1.	$(2a-b)(4x-2y)$ $=2(2a-b)(2x-y)$	√√Bracket 1 and 2 √ CF 2	(3)
	2.1.2	$(ab-ac)-(3b-3c)$ $=a(b-c)-3(b-c)$ $=(b-c)(a-3)$	√ Sign change √CF √ Final brackets	(3)
	2.1.3.	$\left(4x^2+\frac{1}{y^4}\right)\left(4x^2-\frac{1}{y^4}\right)$ $=\left(4x^2+\frac{1}{y^4}\right)\left(2x^2+\frac{1}{y^2}\right)\left(2x\ -\frac{1}{y^2}\right)$ $=$	√√ Brackets √√ Brackets	(4)
2.2.		$a^2-4a+4=(a-2)(a-2)$ $a^2-4=(a-2)(a+2)$ $a^3-8=(a-2)(a^2+2a+4)$ $LCD=(a-2)^2(a+2)(a^2+2a+4)$	√ √ √ √	(4)
				[14]

Question 3				
3.1.	3.1.1	$(4x-1)(x+2)=0$ $4x=1 \quad x=-2$ $x=\frac{1}{4}$	√ brackets √ answer 1 √ answer 2	(3)
	3.1.2	$\frac{2x+1}{x}+\frac{2x}{2x-1}=\frac{3}{1}$ $\times x(2x-1)$ $(2x+1)(2x-1)+2x^2=3(2x^2-x)$ $4x^2-1+2x^2=6x^2-3x$ $-1=-3x$ $x=\frac{1}{3}$	√ LCD √ x LHS by LCD √ x RHS by LCD √ simplify √ answer	(5)
3.2.		$3x+y=2 \quad equ\,1$ $y=-3x+2$ $6x-y=25 \quad equ\ 2$ $Sub\ in\ to\ 2$ $6x-(2-3x)=25$ $6x-2+3x=25$ $9x=27$ $x=3$ $Sub\ in\ 1$ $y=2-3(3)=-7$ $pt\ (3;-7)$	√ get y= √sub into equ 2 √ answer √ sub in √ co-0rdinates	(5)
				[13]
Question 4				
4.1.1.		$\frac{5^{2n+1}\times 3^{2n-3}}{3^{2n}.5^{2n}}$ $=5^{2n+1-(2n)}\times 3^{2n-3-(2n)}$ $=\frac{5}{27}$	√ Denom. prime √ simplify √ answer	(3)
4.1.2.		$\frac{3.2^x-2^x.2^2}{2^x+2^x2^1}$ $\frac{2^x(3-4)}{2^x(1+2)}$ $=\frac{-1}{3}$	√ Factorise top √ Factorise bot √ answer	(3)

4.1.3		$\frac{\sqrt{2^{3000}}}{\sqrt{2^{2990}}} = \sqrt{2^{3000-2990}}$ $= \sqrt{2^{10}} = 2^5$ $= 32$	√ simplify √ answer	(2)
4.2.		$\left(5^2\right)^{1-2x} = 5^4$ $2-4x = 4$ $x = -\frac{1}{2}$	√ Prime factors √ equate exponents √ answer	(3)
				[11]
Question 5				
5.1.		No relation is a 1-m	√√	(2)
5.2.		$2f(x) = 2[2(3(3)^2]-4]$ $= 2[2(27-4)]$ $= 2[2(23)-3]$ $= 2[43]$ $= 86$	√ sub in √ answer	(2)
5.3.		$m_1 \times m_2 = -1 \quad m = 2$ $y = 2x + c \quad sub\ in\ (1;6)$ $6 = 2(1) + c$ $c = 4$ $y = 2x + 4$	√ new gradient √sub in √ answer	(3)
				[7]
Question 6				
6.1.		$x = 0$	√√	(2)
6.2.		(0;4)	√√	(2)
6.3.		(0;-2)	√√	(2)
6.4		$y = -(-x^2 + 4)$ $y = x^2 - 4$		(2)
6.5.		$x > 0$	√√	(2)
6.6.		$y \leq 4$	√ value √ sign	(2)
				[12]

Question 7				
7.1.	7.1.1		√ Shape √ Labels √ Accuracy	(3)
	7.1.2	It has moved up 2	√√	(2)
7.2.	7.2.1	$x = 0$ $y \ \ undefined$ $y = 0$ $0 = \frac{-4}{x} + 2 \qquad 0 = -4 + 2x$ $2x = 4$ $x = 2$	√ x=0 √y=0 √X=2	(3)
	7.2.2	$y = 2 \qquad x = 0$		(2)
	7.2.3			
			√ Shape √ Labels √ Accuracy	(3)

				[13]
Question 8				
8.1.	8.1.1	R25 000	√	(1)
	8.1.2.	Balance is R75000 $75000 \times 4 \times \left(\frac{15}{100}\right) + 75\,000 = 120000$ $\frac{120000}{48} = 2500\,pm$	√ Balance √ Total due √ pm	(3)
8.2.	8.2.1.	12 500  		(1)
	8.2.2.	$A = 12500\left(1+\frac{15}{100}\right)^1 .\left(1+\frac{10}{100}\right)^3$ $= R19133.13$	√ Interest √ Interest √ answer √ Ans	(4)
8.3.		$8000 \times \frac{13,5}{100} \times x = 720$ $x = \frac{720}{8000} \times \frac{100}{13} = 6,7 \times 12 \ = 8\,months$	√ workings √ answer	(2)
				[11]
Question 9				
9.1.	9.1.1	P(A and B)=P(A)+P(B) = $\frac{8}{20} + \frac{12}{20} = \frac{20}{20} = 1$	√√ Answer √ Reason No denom -2	(3)
	9.1.2.	Yes A and B =1 so it is exhaustive	√√	(2)
9.2.	9.2.1	 	√ excluded √ intersection √ balances	(3)
	9.2.2.	$\frac{100}{650} = \frac{2}{13} = 15,38\%$	√ 100 √ 650	(2)
	9.2.2.	$\frac{50+200}{650} = 39,46\%$	√√	(2)
	9.2.3.	$\frac{250}{650}$	√fract √simplify	(2)
				[14]