education

Department of
Education
FREE STATE PROVINCE

GRADE 10



MATHEMATICS

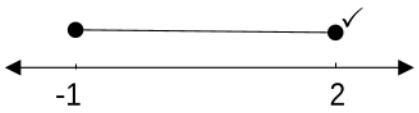
MEMORANDUM
MARCH TEST

MARKS: 50

TIME: 1 HOUR

QUESTION 1			
1.1	0,75 $= \frac{75}{100}$ ✓ $\frac{3}{4}$		$\frac{75}{100}$ ✓ OR $\frac{3}{4}$ ✓ (1)
1.2	$34,4678 = 34,47$		✓ answer (1)
1.3			
	1.3.1	π	✓ answer (1)
	1.3.2	$\sqrt{25}$	✓ answer (1)
	1.3.3	$\sqrt{-7}$	✓ answer (1)
1.4	Find two positive integers between which $\sqrt{33}$ lies. $\sqrt{25} < \sqrt{33} < \sqrt{36}$ ✓ $5 < \sqrt{33} < 6$ ✓ $\therefore \sqrt{33}$ lies between 5and 6		✓ $\sqrt{25} < \sqrt{33} < \sqrt{36}$ ✓answer (2)
1.5	1.5.1	$3x(2x-4xy)$ $= 6x^2 - 12x^2y$	distribution law ✓ $6x^2$ ✓ $-12x^2y$ (2)
	1.5.2	$(x-3)^2$ $= (x-3)(x-3)$ ✓ $= x^2 - 6x + 9$ ✓	✓ $(x-3)(x-3)$ ✓ $x^2 - 6x + 9$ (2)
	1.5.3	$(2r-p)(3r^2 - 4rp + p^2)$ $= 6r^3 - 8r^2p + 2rp - 3r^2p + 4rp - p^3$ $= 6r^3 - 11r^2p + 6rp^2 - p^3$	✓ $6r^3 - 8r^2p + 2rp$ ✓ $-3r^2p + 4rp - p^3$ ✓ $-11r^2p$ and $+6rp^2$ (3)
			[14]
QUESTION 2			
2.1	2.1.1	$2x^2 - 8$ $= 2(x^2 - 4)$ ✓ $= 2(x+2)(x-2)$ ✓	✓HCF of 2 ✓brackets (2)
	2.1.2	$x^2 - 4x + 3$ $= (x-3)(x-1)$ ✓✓	✓✓Factors (2)

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	2.1.3	$2px+3qx-2py-3qy$ $=(2px-2py)+(3qx-3qy)$ ✓ $=2p(x-y)+3q(x-y)$ ✓ $=(2y+3q)(x-y)$ ✓ **OR** $=(2px+3qx)+(-2py-3qy)$ ✓ $=x(2p+3q)-y(2p+3q)$ ✓ $=(x-y)(2p+3q)$ ✓	✓Grouping ✓Common factor for two brackets ✓answer (3)
	2.2	$\frac{27x^3-8}{27x^2+18x+12}$ $=\frac{(3x-2)(9x^2+6x+4)}{3(9x^2+6x+4)}$ ✓✓ $=\frac{3x-2}{3}$ ✓	✓✓Factorising numerator ✓Factorising denominator ✓answer (4)
			[11]
QUESTION 3			
3.1		Solve for x:	
	3.1.1	$(2x+1)(x-3)=0$ $(2x+1)=0$ or $(x-3)=0$ $x=-\frac{1}{2}$ ✓ or $x=3$ ✓	✓ $x=-\frac{1}{2}$ or ✓ $x=3$ (2)
	3.1.2	$3^x=1$ $3^x=3^0$ $x=0$	✓$3^x=3^0$ ✓answer (2)
	3.1.3	$-4\le 3x-1\le 5$ $-4+1\le 3x\le 5+1$ $-3\le 3x\le 6$ ✓ $-1\le x\le 2$ ✓✓  ✓	✓simplification ✓-1 ✓ 2 ✓graphical representation (4)
	3.1.4	$9^{2x+3}=27^{x+5}$ $3^{2(2x+3)}=3^{3(x+5)}$ ✓ $3^{2x+6}=3^{3x+15}$ ✓ $4x+6=3x+15$ ✓	✓same base ✓simplifying ✓equating exponents

		$x = 9$ ✓	✓answer (4)
	3.2	$2x - y = -1$.....(1) and $x + 2y = 12$ …….(2) $x = -2y + 12$ ……..(3) Substitute equation 3 into equation 1 Eq 1: $2(-2y + 12) - y = -1$ ✓ $-4y + 24 - y = -1$ $-5y = -25$ $y = 5$ ✓ Eq 3: $x = -2(5) + 12$ $x = 2$ ✓	✓Making x subject of the formula ✓Subt eq 3 into 1 ✓ $y = 5$ ✓ $x = 2$ (4)
			[16]
QUESTION 4			
4.1		Statement $x = 34^{\circ}$ (Corrsp $\angle$s =)✓ $y = 78$ (Alt $\angle$s =)✓ $z = 180 - 112$ ✓ (Int $\angle$ of Δ or a $\angle$ s on straight line are suppl)✓ $z = 68^{\circ}$ ✓	✓S & R ✓S & R ✓S ✓R ✓answer (5)
4.2	4.2.1	$FEM = 50$ ✓ (Diagonals of rhombus bisect at the vertex $\angle$s)✓	✓S ✓R (2)
	4.2.2	$EFM = 180 - (50 + 90)$ (sum of $\angle$s in Δ)✓ $EFM = 40^{0}$ ✓	✓S ✓R (2)
			[9]