GAUTENG DEPARTMENT OF EDUCATION

GRADE 8

NOVEMBER EXAM 2018

MEMORANDUM

SUBJECT	**:**	**MATHEMATICS**
TASK	**:**	**COMMON EXAM**
TIME	**:**	**2 HOURS**
MARKS	**:**	**100**

MATHEMATICS

SECTION A
QUESTION 1

1.1	C	✓
1.2	D	✓
1.3	D	✓
1.4	B	✓
1.5	C	✓
1.6	A	✓
1.7	D	✓
1.8	D	✓
1.9	D	✓
1.10	B	✓
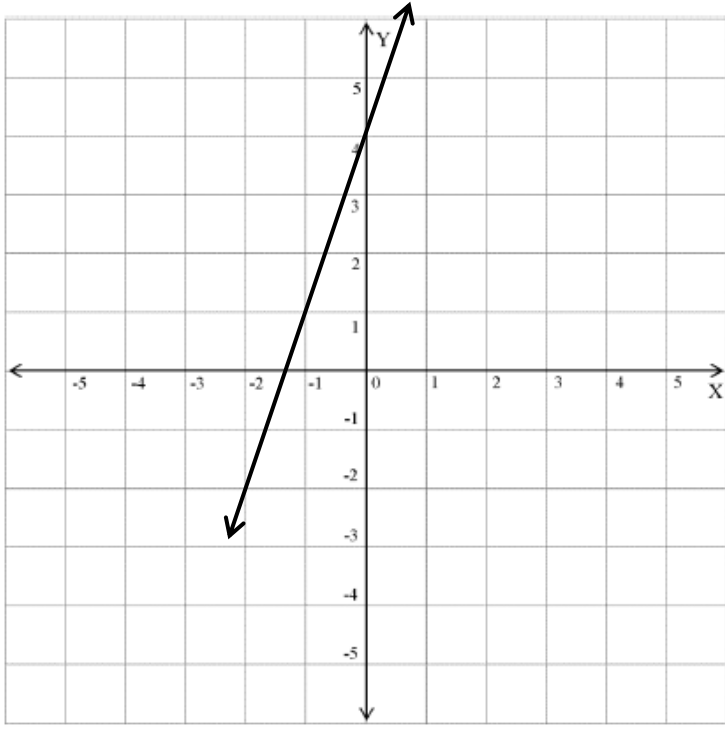
[10]

SECTION B

QUESTION 2			
2.1	Simplify		
	2.1.1	$\sqrt[3]{125} - \sqrt{\dfrac{1}{4}}$ $= 5\checkmark - \dfrac{1}{2}\checkmark$ $= 4\dfrac{1}{2}\checkmark$	(3)
	2.1.2	$\dfrac{1}{2} + \dfrac{1}{4} \div (\dfrac{1}{3} - \dfrac{1}{4})$ $= \dfrac{2+1}{4} \div (\dfrac{4-3}{12})\checkmark$ $= \dfrac{3}{4} \div (\dfrac{1}{12})\checkmark$	

		$= \frac{3}{4} \times (\frac{12}{1})$ ✓ $= 9$ ✓	(4)
	2.1.3	$(-5) - (-8) - (-7) - (+2)$ $= -5 + 8$ ✓ $+ 7 - 2$ ✓ $= 8$ ✓	(3)
			[10]
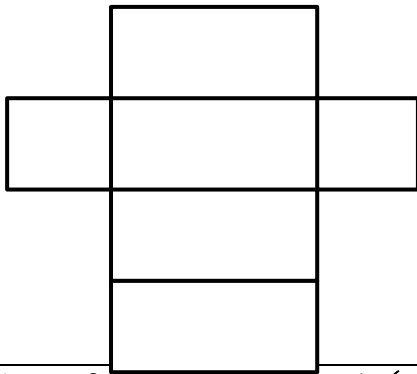
QUESTION 3			
3.1	$3\ 540\ 000 = 3{,}54$ ✓ $\times 10^5$ ✓		(2)
	3.2.1	$5 : 2$ ✓	(1)
	3.2.2	$5 + 2 = 7$ $= \frac{5}{7} \times 84$ ✓ $= 60$ Peanuts ✓ $= \frac{2}{7} \times 84$ ✓ $= 24$ Raisins ✓	(4)
3.3	$speed = \frac{distance}{time}$ $time = \frac{distance}{speed}$ ✓ $= \frac{300km}{65km/h}$ ✓ $= 4$ hours 37 minutes ✓		(3)
			[10]
QUESTION 4			
4.1	He will get $\frac{500000}{18,40}$ ✓ $= £\ 27\ 173,91$ ✓		(2)
4.2	New price $= R550 \times \frac{75}{100}$ ✓ $= R412,50$ ✓		(2)
4.3	$A = P(1 + in)$ ✓ $= 50\ 000(1 + 0,05 \times 5)$ ✓		(3)

		= R62 500 ✓	
	4.4.1	22✓ ; 27✓ ; 32✓	(3)
	4.4.2	Find the general term of the pattern in the form $T_n = \ldots$ $d = 5$ $T_1 = 2 = 5(1) - 3$ $T_2 = 7 = 5(2) - 3$ $T_3 = 12 = 5(3) - 3$ ✓✓ *(method)* $T_n = 5n - 3$ ✓	(3)
	4.4.3	$T_{11} = 5(11) - 3$ ✓ $\quad = 52$ ✓	(2)
			[15]

QUESTION 5

	5.1.1	$a = 3(0) + 4$ ✓ $\quad = 4$ ✓ $b = 3(2) + 4$ ✓ $\quad = 10$ ✓	(4)
	5.1.2		✓ *(y-int)* ✓ *(x-int)* ✓ *(line)* (3)

5.2				
	5.2.1	$6\ km$ ✓		(1)
	5.2.2	$1\ Hour\ 5\ minutes/\ 65\ minutes$ ✓		(1)
	5.2.3	$10\ minutes$ ✓		(1)
				[10]

QUESTION 6

6.1	$-7x^2+3x+4$ $+(-x^2+2x+3)$ $-8x^2$ ✓ $+\ 5x$ ✓ $+\ 7$ ✓			(3)
6.2	Simplify			
	6.2.1	$2x(1-x+y)-x(y-3+2x)$ $=2x-2x^2+2xy$ ✓ $-xy+3x-2x^2$ ✓ $=-4x^2+xy+5x$ ✓		(3)
	6.2.2	$\dfrac{(4a^2)(-3a^3)}{-6a^4}$ $=\dfrac{-12a^5}{-6a^4}$ ✓ $=2a$ ✓✓		(3)
	6.2.3	$\dfrac{12x^2-4x}{4x}-\dfrac{10x^2-15x}{5x}$ $=3x-1$ ✓ $-2x-3$ ✓ $=x-4$ ✓		(3)
6.3	$\dfrac{x}{2}+\dfrac{y}{6}=\dfrac{2}{2}+\dfrac{-3}{6}$ ✓ $=\dfrac{2}{2}-\dfrac{1}{2}$ ✓ $=\dfrac{1}{2}$ ✓			(3)
				[15]

QUESTION 7

7.1				
	7.1.1	$2x - 1 = -5$ $2x = -5 + 1$ ✓ $2x = -4$ ✓ $x = -2$ ✓		(3)
	7.1.2	$3x - 2 = x + 4$ $3x - x = 4 + 2$ ✓ $2x = 6$ ✓ $x = 3$ ✓		(3)
	7.1.3	$\dfrac{x}{-3} + 2 = -2$ $\dfrac{x}{-3} \times -3 + 2 \times -3 = -2 \times -3$ ✓ $x - 6 = 6$ ✓ $x = 12$ ✓		(3)
7.2		$x + y = 165$ $+(x - y = 27)$ $2x = 192$ ✓ $x = 96$ ✓ $y = 165 - 96$ ✓ $y = 69$ ✓		(4)
				[13]
QUESTION 8				
8.1	$x + 20^0 = 60^0$ ✓ $x = 60^0 - 20^0$ ✓ $x = 40^0$ ✓			(3)
8.2	$\hat{T} + 50^0 + 35^0 = 180^0$ ✓ $\hat{T} = 180^0 - 85^0$ ✓ $= 95^0$ ✓ $\hat{T} = m = 95^0$ ✓			(4)
8.3	A ||| B ✓ and F ||| H C ≡ D ✓ and F ≡ H ✓			(4)

8.4	$\widehat{A} = \widehat{E} ✓ = 40^0$ [Alternate Ls, AB ∥DE] ✓	
	$\widehat{C}_1 = \widehat{C}_2$ ✓ [Vertically opp. angles]	
	$\widehat{B} = \widehat{B}$ ✓ [Remaining angles]	
	∴ ΔABC ≡ ΔEDC ✓ [AAA] ✓	
		(6)
		[17]

QUESTION 9

9.1			
	9.1.1	Perimeter = 10 cm + 9 cm + 6 cm + 11cm✓ + 4 cm+20 cm ✓ = 60 cm ✓	(3)

	9.1.2	Area = 10 cm × 9 cm + 4 cm × 11 cm ✓
		
		       = 90 cm^2 + 44 cm^2 ✓
		
		       = 134 cm^2 ✓
			(3)

9.2			

	9.2.1	$V = lbh$
		
		     = 6 m × 3 m × 2 m ✓
		
		     = 36 m^3 ✓
			(2)

	9.2.2		(1)

	9.2.3	Surface Area = 4(6 cm × 3 cm) + 2(3 cm × 2 cm) ✓
		
		       = 72 cm^2 +12 cm^2 ✓
		
		       = 84 cm^2 ✓
			(3)

			[12]

QUESTION 10

10.1	Below are marks of a grade 9 class after writing a mathematics test out of 40. Answer the questions that follow based on the data. All answers must be rounded off to one decimal place. 27 25 27 29 31 24 25 27 28 29 24 26 30

		28 31 25 25 27 28 28 28 26 28 31 24 30	
	10.1.1	Mean $= \dfrac{sum\ of\ scores}{number\ of\ scores}$ $= \dfrac{711}{26}$ ✓ $= 27,35$ ✓	(2)
	10.1.2	24 24 24 25 25 25 25 26 26 27 27 27 27 28 28 28 28 28 28 29 29 30 30 31 31 31 Median $= \dfrac{27+28}{2}$ ✓ $= 27,5$ ✓	(2)
	10.1.3	Mode $= 28$ ✓	(1)
	10.1.4	Range $= 31 - 24$ ✓ $= 9$ ✓	(2)
	10.2	$27,5$ ✓	(1)
			[8]
		Total	**[121]**