

GAUTENG PROVINCE

EDUCATION

REPUBLIC OF SOUTH AFRICA

GAUTENG NORTH DISTRICT OFFICE

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LEARNER'S NAME & SURNAME	:	
SUBJECT	:	**MATHEMATICS**
GRADE	:	**9**
TASK	:	**Term 1 Assignment**
MARKS	:	**50**
DURATION	:	**1 Hour**

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Question	1	2	3	4	5	Total
Topic	Properties of Numbers	Calculations and Calculation Techniques	Multiples and Factors	Integers	Solving Problems	
Total Mark	07	13	5	12	13	**50**
Learner Mark						

Instructions to the learner

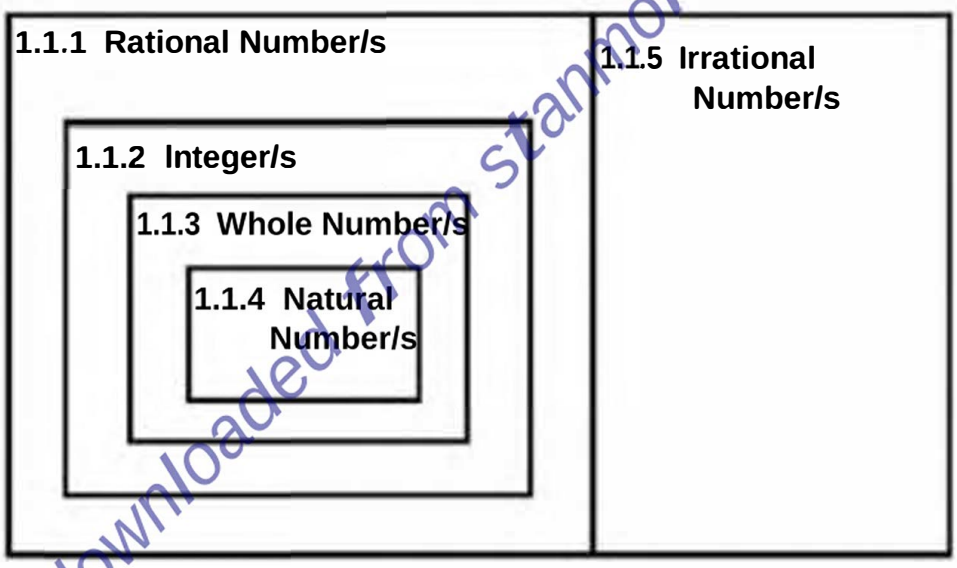
1. Read all the instructions carefully.
2. Answer all the questions in the spaces provided.
3. All working must be shown.
4. The assignment is out of 50 marks.
5. The duration is 1 hour.
6. Approved scientific calculators may be used unless stated otherwise.

Question 1 [Properties of Numbers]

1.1 The diagram below is an exact representation of the real number system. Classify the numbers below in accordance with the area in which they belong. Some numbers may be repeated.

$$-\frac{7}{3}\ ;\ 2\pi\ ;\ \sqrt[3]{9}\ ;\ 2,\dot{3}\ ;\ 0\ ;\ \sqrt{4}\ ;\ 10$$

The Real Number System



Write your answers on the spaces provided below.

1.1.1 _____ (1)

1.1.2 _____ (1)

1.1.3 _____ (1)

1.1.4 _____ (1)

1.1.5 _____ (1)

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1.2 Insert the two whole numbers on both sides of $\sqrt{24}$: (2)

$\square < \sqrt{24} < \square$

[07]

Question 2 [Calculations and Calculation Techniques]

2.1 Use estimation to calculate the following by rounding off the numbers to the nearest 100. (4)

2.1.1 $723 + 586$	2.1.2 $2850 - 1155$

2.2 Determine the exact answer for each of the calculations in question 2.1 above, by working out the errors caused by rounding, and compensating for them. (4)

2.2.1 $723 + 586$	2.2.2 $2850 - 1155$

2.3 Multiply the following by using the column Method: (2)

1988×34

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2.4 Use a calculator to check your answer to question **2.3**. (1)

2.5 A municipality has budgeted R80 000 for putting up new street name boards. The street name boards cost R134 each. How many new street name boards can be put up, and how much money will be left in the budget? (2)

[13]

Question 3 [Multiples and Factors]

3.1 Three numbers are given below. Use prime factorisation to determine the HCF and LCM. (5)

1848	**132**	**462**

[05]

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Question 4 [Integers]

4.1 Determine the number that makes the following statement true. (1)

$53 - (\text{a certain number}) = 65$

The certain number =_____

4.2 Calculate the following without the use of a calculator:

4.2.1 $\dfrac{50 \times 33 + 25 \times 50}{10 \times 50 - 50 \times 19}$ (3)

_____

_____

_____

_____

4.2.2 $-3 - (-2)(5) - (-4)^3$ (3)

_____

_____

_____

_____

4.2.3 $\dfrac{3^3 - \left(-\sqrt{4}\right)^2 + \sqrt[3]{-64}}{-4^2 \times 1^3 + 17}$ (5)

_____

_____

_____

_____

[12]

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Question 5 [Solving Problems]

5.1 Write $24 : 18$ in simplest form. (1)

5.2 Complete the table and determine if the proportion is direct or indirect. Give a reason for your answer. (4)

Numbers of pens	2	6	10		20
Price in Rands	7	21		42	

5.3 A farmer ploughs his lands in 12 days if he uses 5 tractors. How long will it take if he uses only 3 tractors? (3)

5.4 Karabo and John are at the same rest stop alongside a highway. Karabo started driving along the highway at a constant speed of 80 km/h. An hour later, John started driving along the same highway in the same direction as Karabo at the constant speed of 100 km/h. How long will it take John to catch up with Karabo? (5)

[13]

The End?

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MEMORANDUM		
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Question 1 [Properties of Numbers]

	1.1.1	$-\frac{7}{3}$; $2,\dot{3}$; 0 ; $\sqrt{4}$; 10 ✓**A**	(1)
	1.1.2	0 ; $\sqrt{4}$; 10✓**A**	(1)
	1.1.3	0 ; $\sqrt{4}$; 10✓**A**	(1)
	1.1.4	$\sqrt{4}$; 10✓**A**	(1)
	1.1.5	2π ; $\sqrt[3]{9}$ ✓**A**	(1)
1.2	Insert the two whole numbers on both sides of $\sqrt{24}$: $\boxed{4}$✓ $< \sqrt{24} <$ $\boxed{5}$✓ **A**		(2)
			[07]

Question 2 [Calculations and Calculation Techniques]

2.1	2.1.1 $723 + 586$ $723 \approx 700$ $586 \approx 600$ ✓**A** $\therefore 700 + 600 = 1300$ ✓***CA***	2.1.2 $2850 - 1155$ $2850 \approx 2900$ $1155 \approx 1200$ ✓**A** $\therefore 2900 - 1200 = 1700$✓**CA**	(4)
2.2	2.2.1 $723 + 586$ Estimated answer $= 1300$ $1300 + 23 - 14$✓**M** $= 1309$✓**CA**	2.2.2 $2850 - 1155$ Estimated answer $= 1700$ $1700 - 50 + 45$✓**M** $= 1695$✓**CA** **Award only 1 mark for the answer if learner did not show the compensated errors.**	(4)
2.3	Multiply the following by using the column Method: 1988×34 1988		(2)

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	$\times 34$ 7952✓**A** 59640 ✓**A** 67592 **No mark for the final answer.**	
2.4	$1988 \times 34 = 67\,592$ ✓**A** **one mark for answer.**	(1)
2.5	$R80\,000 \div R134 = 597{,}0149254$ $\therefore$ ***597 street names can be put up.***✓**A** $597 \times R134 = R79\,998$ $R80\,000 - R79\,998 = R2$ $\therefore$ ***there will be R2 left***✓**CA**	(2)
		[13]

Question 3 [Multiples and Factors]

3.1	**1848** **1848 | 2** **924 | 2** **462 | 2** **231 | 3** **77 | 7** **11 | 11** **1 |** ✓**A** **132** **132 | 2** **66 | 2** **33 | 3** **11 | 11** **1 |** ✓**A** **462** **462 | 2** **231 | 3** **77 | 7** **11 | 11** **1 |** ✓**A** $1\,848 = 2^3 \times 3 \times 7 \times 11$ $132 = 2^2 \times 3 \times 11$ $462 = 2 \times 3 \times 7 \times 11$ $LCM = 2^2 \times 3 \times 7 \times 11 = 924$✓**CA** $HCF = 2 \times 3 \times 11 = 66$✓**CA**	(5)
		[05]

Question 4 [Integers]

4.1	The certain number $= -12$✓**A**	(1)
4.2.1	$\dfrac{50 \times 33 + 25 \times 50}{19 \times 50 - 50 \times 48}$	(3)

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	$= \frac{50(33+25)}{50(19-48)}$ ✓**M** $= \frac{58}{-29}$ ✓**CA** $= -2$ ✓**CA**	
4.2.2	$-3-(-2)(5)-(-4)^3$ $= -3-10-(-64)$ ✓**M** $= -13+64$ ✓**CA** $= 51$ ✓**CA**	(3)
4.2.3	$\frac{3^3-\left(-\sqrt{4}\right)^2+\sqrt[3]{-64}}{-4^2\times 1^3+17}$ $= \frac{27\checkmark\mathbf{A}-(4)\checkmark\mathbf{A}+(-4)\checkmark\mathbf{A}}{-16+17\checkmark\mathbf{M}}$ $= \frac{19}{1}$ $= 19$ ✓**CA**	(5)
		[12]

Question 5 [Solving Problems]

5.1	$4:3$ ✓**A**	(1)
5.2	**Numbers of pens** | 2 | 6 | 10 | **12** ✓**A** | 20 **Price in Rands** | 7 | 21 | **35** ✓**A** | 42 | **70** ✓**A** The proportion is direct, as the number of pens increase the price also increases at the same rate. ✓**A(no mark should be awarded for the reason if 'same rate' is not mentioned).** **Or** The proportion is direct, number of pens divided by the price equals a constant. ✓**A** $\left(\frac{number\ of\ Pens}{Price\ in\ rands} = a\ constant\right)$	(4)
5.3	**Indirect Proportion: number of days × number of tractors = a constant** **Let the number of days using 3 tractors equal x.**	(3)

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	$x \times 3 = 12 \times 5$✓**M** $3x = 60$✓**CA** $x = 20$✓**A**	
5.4	By the time John catches up with Karabo, the distance travelled by each of them will be equal. distance = time × speed Let John's travelling time be = $\boldsymbol{x}$ Karabo started travelling 2 hours before John ∴ Karabo's travelling time will be = $(x + 2)$ John's Distance = Karabo's Distance time × speed = time × speed $\therefore x \times 120 = (x + 2) \times 90$ ✓✓✓**M** $120x = 90x + 180$ ✓**CA** $120x - 90x = 180$ $30x = 180$ $x = 6$ ✓**CA** It will take John **6 hours** to catch up with Karabo.	(5)
		[13]

The End?