GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

GRADE 8

NOVEMBER EXAM 2018

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

MATHEMATICS

INSTRUCTIONS

1. This Question Paper has two sections, Section A and Section B.
2. Section A has 10 multiple choice questions each with 4 possible answers.
3. Answer Section A on the mark-sheet provided by circling the letter of the correct answer (**A – D**).
4. Section B has 9 questions. Answer ALL questions.
5. Read through the questions carefully and make sure that you allocate enough time for each question.
6. Show all working unless otherwise stated.
7. Round off your answers to two decimal places unless otherwise stated.
8. A non-programmable calculator may be used unless otherwise stated.
9. Write as neatly and clearly as possible.
10. Tear off the answer sheet (**Section A**) and the grid (**Question 5.1.2**) from your question paper and submit them with your answer book.
11. Write your name on each sheet of paper submitted.

SECTION A

QUESTION 1

1. Circle the letter of the correct answer from the four possible answers.

1.1 The HCF of 18 ; 30 and 48 is: (1)

A 3 B 4 C 6 D 8

1.2 $\frac{3}{6}+\frac{2}{8}+\frac{1}{4}=\ldots$ (1)

A $\frac{6}{18}$ B $\frac{6}{24}$ C $\frac{2}{7}$ D 1

1.3 $4{,}8-2{,}042=\ldots$ (1)

A 2,38 B 2,420 C 2,756 D 2,758

1.4 $\sqrt{49\times121}=\ldots$ (1)

A 18 B 77 C 170 D 17

1.5 If the temperature is $-7\ ^0C$ and then it rises by $15\ ^0C$, what will the temperature be? (1)

A $-22\ ^0C$ B $22\ ^0C$ C $8\ ^0C$ D $-8\ ^0C$

1.6 If $\frac{3}{4}$ of the 4 500 000 people in a city are between the ages of 15 and 40, how many people is this? (1)

A 3 375 000 B 281 250 C 337 500 D 33 750 000

1.7 The number of terms in the expression $2(x+y)+xy-39$ is … (1)

A 4 B 5 C 2 D 3

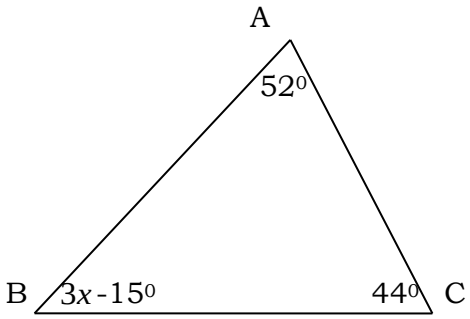
1.8 Which equation best expresses the statement: (1)

"The sum of the squares of t and p is 25".

A $2t+2p=25$ B $\sqrt{t^2}+\sqrt{p^2}=25$ C $(t+p)^2=25$

D $t^2+p^2=25$

1.9 In ΔABC below $x = ...$ (1)



A. 30^0 B. 36^0 C. 37^0 D. 33^0

1.10 Six counters in a bag are numbered **3 4 7 9 10 11**. (1)
One counter is drawn at random from the bag. The probability that the number drawn is a prime number is ….

A $\frac{1}{6}$ B $\frac{1}{2}$ C $\frac{1}{3}$ D $\frac{4}{6}$

[10]

SECTION B

QUESTION 2

2.1 Simplify

2.1.1 $\sqrt[3]{125} - \sqrt{\frac{1}{4}}$ (3)

2.1.2 $\frac{1}{2} + \frac{1}{4} \div (\frac{1}{3} - \frac{1}{4})$ (4)

2.1.3 (–5) – (–8) – (–7) – (+2) (3)

[10]

QUESTION 3

3.1 Write 3 540 000 in scientific notation. (2)

3.2 A mix of peanuts and raisins contains five peanuts for every two raisins.

3.2.1 Write down the ratio of the peanuts to raisins. (1)

3.2.2 If the total number of peanuts and raisins in a mix is 84, calculate the number of peanuts and the number of raisins in the mix. (4)

3.3 A car travels a distance of 300 km at an average speed of 65 km/h.
How long does it take the car to cover the distance? (3)

[10]

QUESTION 4

4.1 Mr Catch saves money for his intended relocation to Britain. He keeps himself updated with the exchange rates by watching the daily business news on TV. On a particular day the Rand/ Pound exchange rate was £1= R18, 40. How many pounds will he get in exchange for his savings of R500 000? (2)

4.2 A pair of jeans priced at R550 is put on sale for 25 % discount. How much is the new price? (2)

4.3 Mrs Tate saves a lump sum of R50 000 for her daughter's university fees. If her money is invested for five years on simple interest option of 5 % per annum, how much pay-out will she receive at the end of five years? (3)

4.4 The first four terms of a number pattern is 2 ; 7 ; 12 ; 17 ; …

4.4.1 Find the next three terms of the pattern. (3)

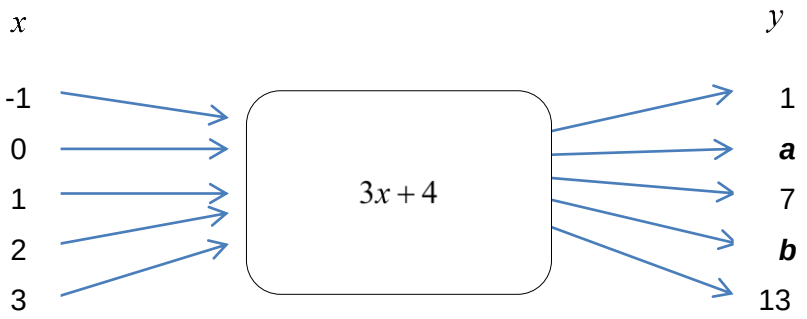
4.4.2 Find the general term of the pattern in the form $\mathbf{T_n = \ldots}$ (3)

4.4.3 Use your formula in 4.4.2 to find the 11^{th} term in the pattern. (2)

[15]

QUESTION 5

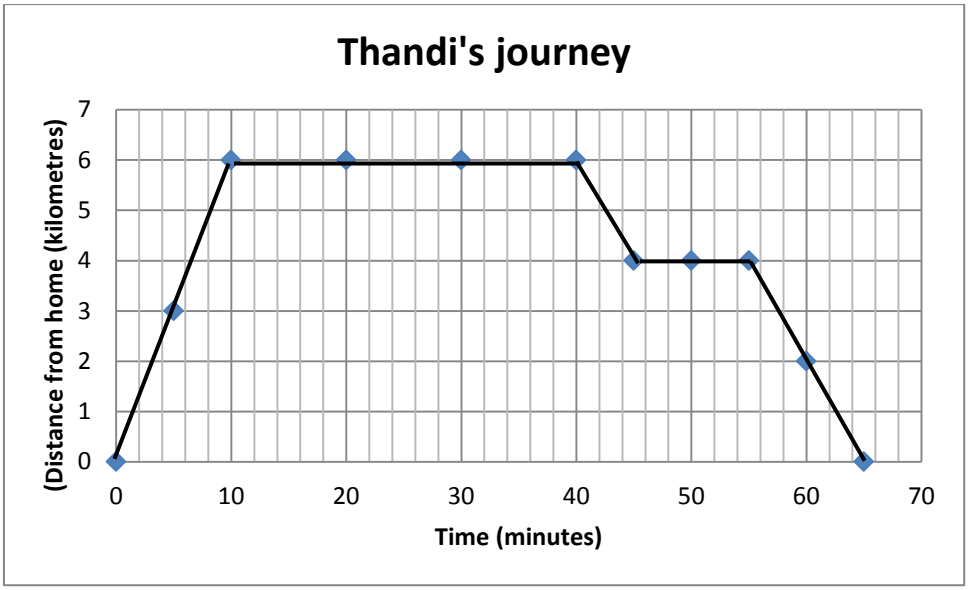
5.1 Study the flow diagram below and answer the questions that follow.



5.1.1 Calculate the output values ***a*** and ***b***. (4)

5.1.2 Draw a graphical representation of the relation. (3)

5.2 Thandi cycled from her home to town and back for shopping. On her way back she stops at the filling station to have her bicycle wheels checked. Below is a graphical representation of her journey.



5.2.1 How far is Thandi's home from town? (1)

5.2.2 How long was she away from home? (1)

5.2.3 How long did she stay at the filling station? (1)

[10]

QUESTION 6

6.1 Add $3x-7x^2+4$ and $3+2x-x^2$ (3)

6.2 Simplify

6.2.1 $2x(1-x+y)-x(y-3+2x)$ (3)

6.2.2 $\dfrac{(4a^2)(-3a^3)}{-6a^4}$ (3)

6.2.3 $\dfrac{12x^2-4x}{4x}-\dfrac{10x^2-15x}{5x}$ (3)

6.3 Find the value of $\dfrac{x}{2}+\dfrac{y}{6}$ if $x=2$ and $y=-3$ (3)

[15]

QUESTION 7

7.1 Solve for x

7.1.1 $2x-1=-5$ (3)

7.1.2 $3x-2=x+4$ (3)

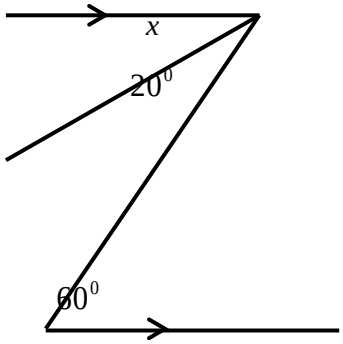
7.1.3 $\frac{x}{-3}+2=-2$ (3)

7.2 The sum of two numbers is 165 and their difference is 27. Find the numbers. (4)

[13]

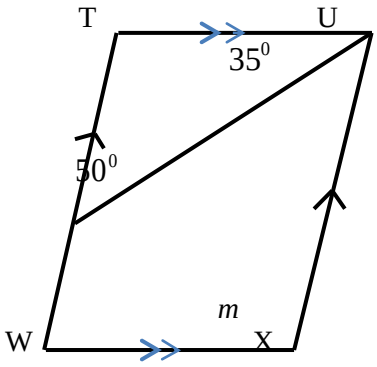
QUESTION 8

8.1 In the diagram below calculate the size of x.



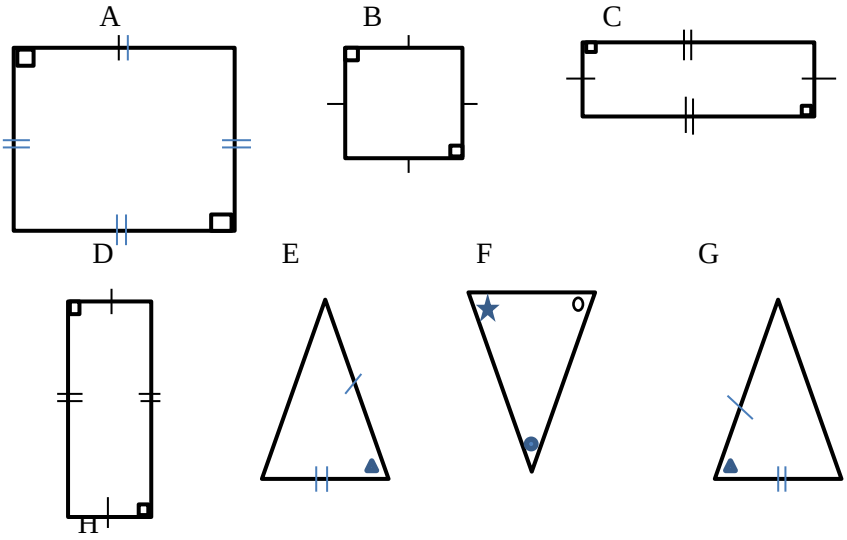
(3)

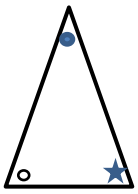
8.2 Calculate the size of m.



(4)

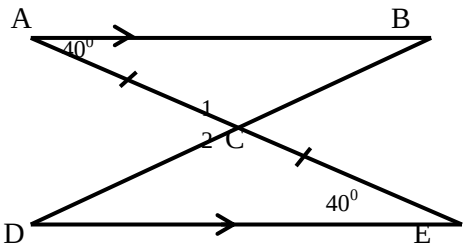
8.3 Which of the shapes below are similar and which ones are congruent?





(4)

8.4 Complete the prove that $\Delta ABC \equiv \Delta EDC$



$\hat{A} = \ldots\ldots = 40^0$ [……..]

$\hat{C}_1 = \ldots\ldots$ [Vertically opp. angles]

$\hat{B} = \ldots\ldots$ [Remaining angles]

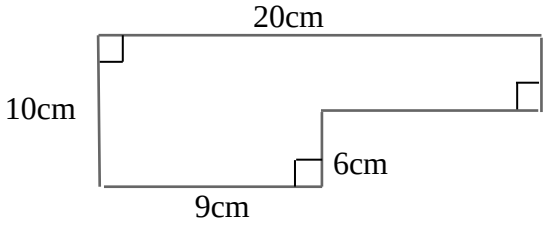
$\therefore$ …… [……]

(6)

[17]

QUESTION 9

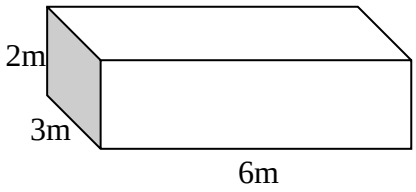
9.1 Study the shape below and answer the questions that follow.



9.1.1 Calculate the perimeter of the shape. (3)

9.1.2 Calculate the area of the shape. (3)

9.2 Below is a closed rectangular box.



9.2.1 Calculate the volume of the box. (2)

9.2.2 Draw a net of the box. (1)

9.2.3 Calculate the surface area of the box. (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 Calculate the mean. (2)

10.1.2 Find the median. (2)

10.1.3 What is the mode of the data? (1)

10.1.4 Calculate the range. (2)

10.2 If the same test could be given to another grade 9 class taught the same way by the same teacher what mark do you think most learners will get? (1)

[8]

Total [120]

SECTION A

QUESTION 1

Name: _____ Class: _____

Marks: 10

Circle the letter of the correct answer. **Submit this with your answer sheets.**

Question	Answer			
1.	A	B	C	D
2.	A	B	C	D
3.	A	B	C	D
4.	A	B	C	D
5.	A	B	C	D
6.	A	B	C	D
7.	A	B	C	D
8.	A	B	C	D
9.	A	B	C	D
10.	A	B	C	D

Name: _____ Class: _____

QUESTION 5

5.1.2

Submit this with your answer sheets.