GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

GRADE 8

NOVEMBER EXAM 2019

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

INSTRUCTIONS AND INFORMATION

1. This question paper consists of 10 questions.
2. Answer ALL the questions.
3. Use **ANNEXURE A** provided to answer **QUESTION 1**
4. Use **ANNEXURE B** provided to answer **QUESTION 10.2.2**
5. Use **ANNEXURE C** provided to answer **QUESTION 10.4**
6. Ensure that you write your name and class on both ANNEXURE A, B and C tear them from the question paper and submit it with your answer sheet.
7. Clearly show ALL calculations, diagrams, graphs, et cetera which you have used in determining the answers.
8. Answers only will NOT necessarily be awarded full marks.
9. If necessary round off your answers to TWO decimal places, unless stated otherwise.
10. Diagrams are not necessarily drawn to scale.
11. You may use an approved scientific calculator (non-programmable and non-graphical) unless stated otherwise.
12. An information sheet with formulae is included at the end of the question paper.
13. Write neatly and legibly.

QUESTION 1

In this question, **circle** only the correct letter (A–D) next to the corresponding number use **ANNEXURE A** provided to answer this multiple choice question.

1.1 Which ONE of the following numbers is a composite number? (1)

A 23

B 37

C 21

D 31

1.2 270 as the product of its prime factors is: (1)

A $2 \times 3 \times 5 \times 9$

B $5 \times 5 \times 5 \times 2 + 2 \times 10$

C $2 \times 3 \times 3 \times 3 \times 5$

D $2 \times 2 \times 5 \times 5 \times 2 + 20 + 50$

1.3 How much VAT is included in $R249$? (1)

A $R\ 34{,}86$

B $R30{,}58$

C $R30{,}57$

D $R31{,}57$

1.4 $4 - \{2 \times 30 \div 5 + 3(-12 \div 4)\}$ (1)

A -8

B 1

C 11

D -7.5

1.5 In scientific notation 150 THOUSAND will be written as: (1)

A 15×10^5

B $0{,}15 \times 10^7$

C $1{,}5 \times 10^5$

D $1{,}5 \times 10^{-5}$

1.6 Increase 24 in the ratio $2:3$ (1)

A 40

B 36

C 60

D 144

1.7 How many terms in $2x^2 - \left(\frac{1}{2}x + 3y\right) + \frac{2x^3 - y}{x}$: (1)

A 3

B 5

C 6

D 7

1.8 A quadrilateral with both pairs of opposite sides parallel and a pair of adjacent sides equal is a _____ (1)

A Parallelogram

B Rhombus

C Kite

D Triangle

1.9 $\sqrt[3]{\frac{64}{125}} \div \sqrt{\frac{64}{36}}$ (1)

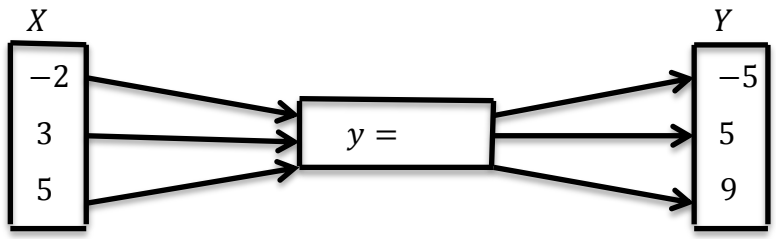
A $3{,}5$

B $\frac{3}{5}$

C $\frac{16}{15}$

D $\frac{24}{41}$

1.10 Write the equation defining the relationship between the input x and output y. (1)



A $y = 2x + 1$

B $y = 2x - 1$

C $y = 3x - 2$

D $y = x - 2$

[10]

QUESTION 2

2.1 Find the following:

2.1.1 The HCF of 160 and 400 (3)

2.1.2 Sarah gives $R2$, Mpho gives $R4$ and Jabu gives $R6$ to buy a packet of sweets.

If there are 24 sweets in the packet, how many sweets should each of the get? (3)

2.1.3 Simplify the ratio $200g : 4kg$ (2)

2.2 Dineo buys a dining room table and chairs costing $R4500$. She pays 10% deposit and then makes monthly repayments for 2 years to pay for the dining room table and chairs. The shopkeeper charges him 15% p.a. interest.

2.2.3 Calculate the cost of the dining room chairs and table after the deposit has been paid. (2)

2.2.2. Calculate the simple interest charged. (2)

2.2.4 How much will she pay every month (2)

[14]

QUESTION 3

Simplify the following:

3.1 $3^{18} \div 3^{15}$ (1)

3.2 $4^2 \times 4^1 \times 4^0$ (1)

3.3 $(x^3y)^4 \times 2x^3$ (3)

3.4 $\sqrt{16a^2b^6c^8}$ (2)

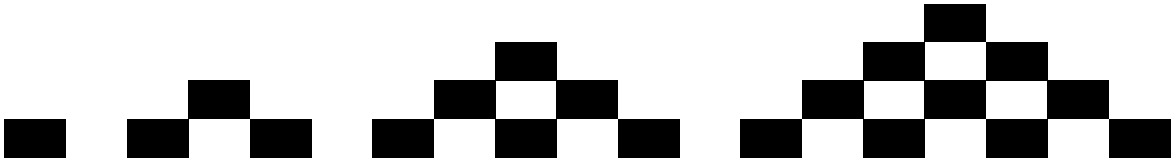
[7]

QUESTION 4

4.1 Consider the pattern: $9;\ 14;\ 19;\ 24;\ldots..$

Determine the rule the n^{th} term to describe the above pattern. (2)

4.2



Pattern 1 Pattern 2 Pattern 3 Pattern 4

4.2.1 Draw the next pattern in the sequence. (1)

4.2.2 Use the pattern to complete the table below. (2)

Pattern number	1	2	3	4	9
Number of dots	1	3	6		

[5]

QUESTION 5

5.1 In the expression $-3x^3 + 12x - 25$

5.1.1 Write down the coefficient of x^3 (1)

5.1.2 What is the value of the constant term? (1)

5.2 Simplify:

5.2.1 $3y^2 - 10y^2$ (1)

5.2.2 $\frac{10m^6n - 6m^2n + 4m^4n}{2m^4n^2}$ (2)

5.2.3 $(-4x^2 + 7x + 8) - (-3x^2 - 8x - 9)$ (2)

[7]

QUESTION 6

Solve for the unknown in the following equation

6.1 $15 + a = 28$ (1)

6.2 $2f - 10 = 40$ (2)

6.3 $2(x + 1) = 10$ (2)

6.4 $2^x = 32$ (2)

6.5 John has 50c and R1 coins in his pocket. Together he has 20 coins. In total the amount of money in his pocket is R12,00

Write an algebraic equation and determine the number of 50c and R1 coins that John has in his pocket. (3)

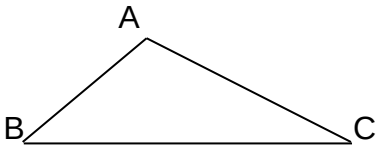
[10]

QUESTION 7

7.1 Construct a 90^0 angle and bisect the constructed angle (2)

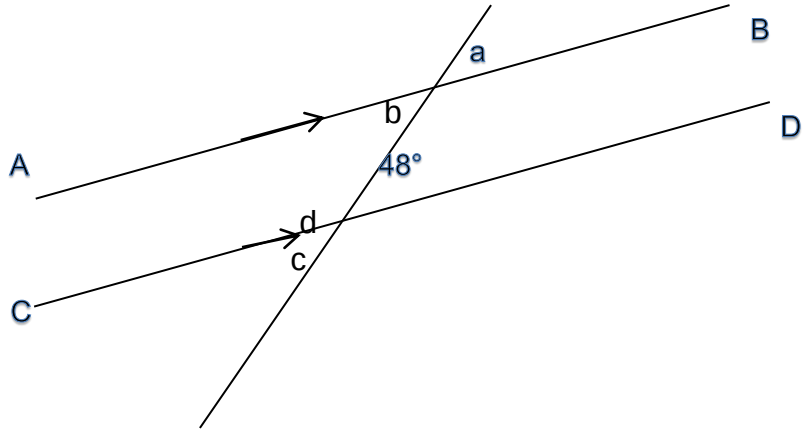
7.2 Calculate the size of the missing angles with reasons.

7.2.1

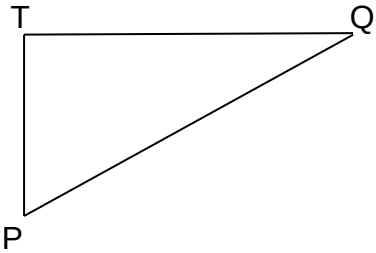


Angle A = 83º
Angle C = 38º (2)

7.3 Calculate the sizes of angles a, b, c and d with reasons (4)



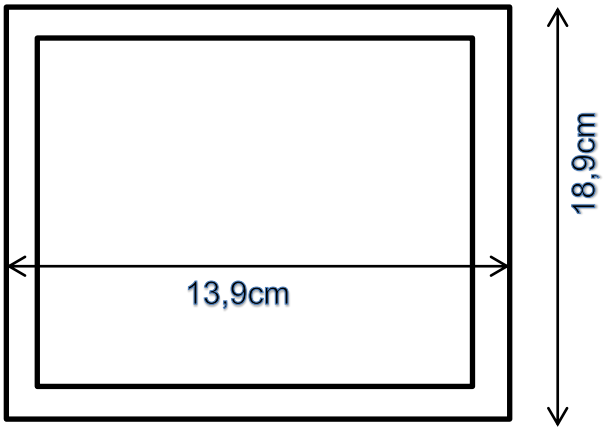
7.5 ΔPQT is a right-angled triangle with angle T = 90°. Find with reasons PT if PQ = 50cm and TQ = 40cm.



(3)
[11]

QUESTION 8

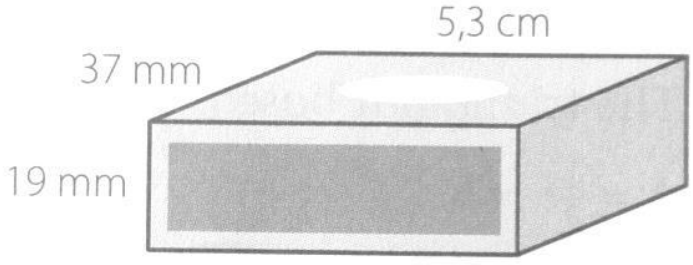
8.1 Find the area of a rectangular picture frame with outer dimensions $18{,}9\ cm$ by $13{,}9\ cm$ and the perimeter of inner dimensions $15\ cm$ by $10\ cm$.



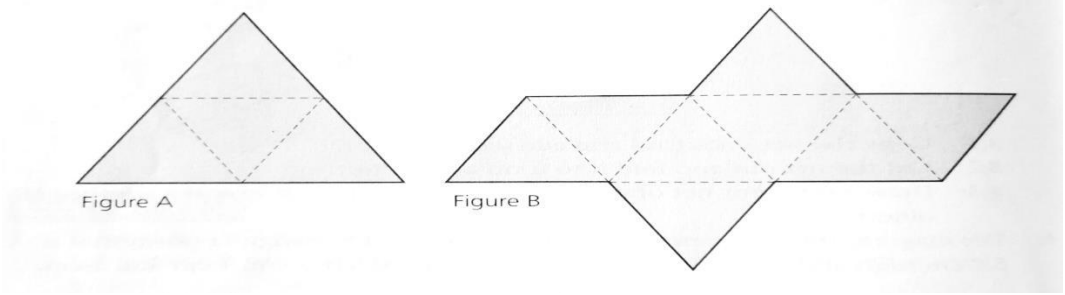
(4)

8.2 A medicine measuring cup has a capacity of $5ml$. How much medicine measures of cough medicine are there in a bottle that contains $0{,}5$ litres? (2)

8.3 Calculate the surface area of this matchbox. (3)



8.4



8.4.1 Name the solid in Figure 1 (1)

8.4.2 Name the solid in Figure 2 (1)

8.4.3 Write down the number of faces for the solid in Figure 1 (1)

8.4.4 Write down the number of edges for the solid in Figure 2 (1)

[13]

QUESTION 9

The heights of 40 grade 8 learners are shown below

160	170	156	151	165	168	166	163	155	180
164	170	162	160	177	171	182	168	158	160
168	165	152	150	178	181	162	175	174	172
161	173	172	165	162	160	164	166	165	169

9.1 Draw a stem and leave display to show these heights. (3)

9.2 Complete a frequency table to show the heights (2)

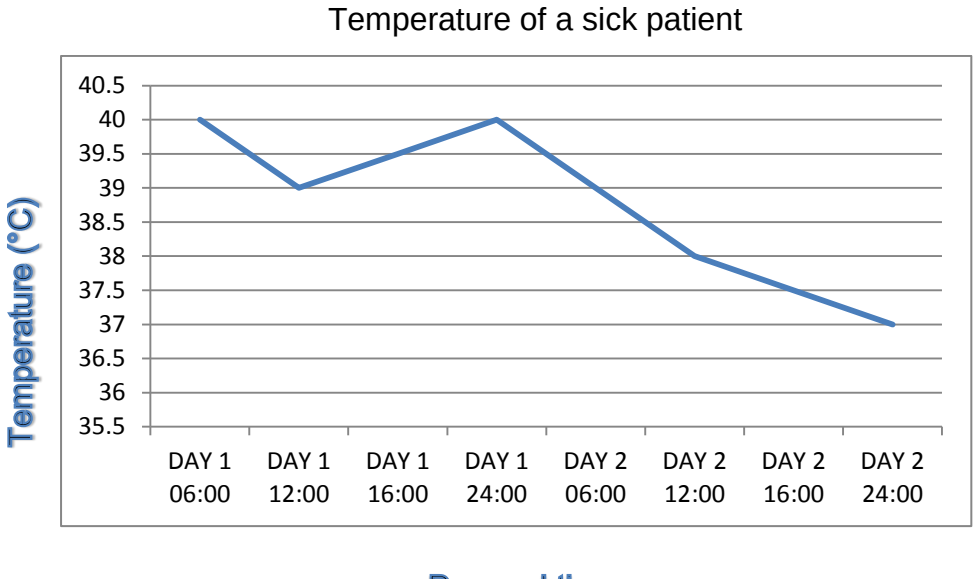
9.3 What is the mean of the set of data (1)

9.4 What is the median of the set of data (1)

9.5 What is the mode of the set of data (1)

[8]

QUESTION 10



A nurse recorded patient's temperature at different times of the day. Her measurements are shown in the graph above

10.1.1 How many times a day was the patient's temperature taken? (1)

10.1.2 What is the difference between the highest and the lowest temperatures? (1)

10.1.3 The normal human body temperature is 37 °C, on what day was the patient's temperature normal? (1)

10.2 Use the equation $y = x + 4$ to answer the questions that follow.

10.2.1

x	-2	-1	0	1	2
y					

(1)

10.2.2 Plot the ordered pairs on the Cartesian plane and join the points.
(Use the Cartesian plane provided **Annexure B**) (2)

10.3 Simoné conducted a survey among learners in her grade to find out their favorite colour. She summarized her findings in this table

Favorite colour	Red	Blue	Green	Orange	Yellow	Purple	Black
Number of learners	14	18	11	6	8	4	3

10.3.1 Represent Simoné's findings in a pie chart. (4)

10.3.2 What is the probability that the favorite colour of a learner, chosen at random, is one of the following:

10.3.2.1 Yellow (1)

10.3.2.2 Orange or purple (1)

10.4 Plot points M(5 ; 2) and N (-2 ; 4) on a coordinate plane.
(Use the Cartesian plane provided **ANNEXURE C**) (2)

10.4.1 Reflect point M in the y-axis to map onto M´ (1)

10.4.2 Translate point N 5 places right and 6 places down, to map N´´ (1)

[16]

ANNEXURE A

QUESTION 1

NAME:……...CLASS……

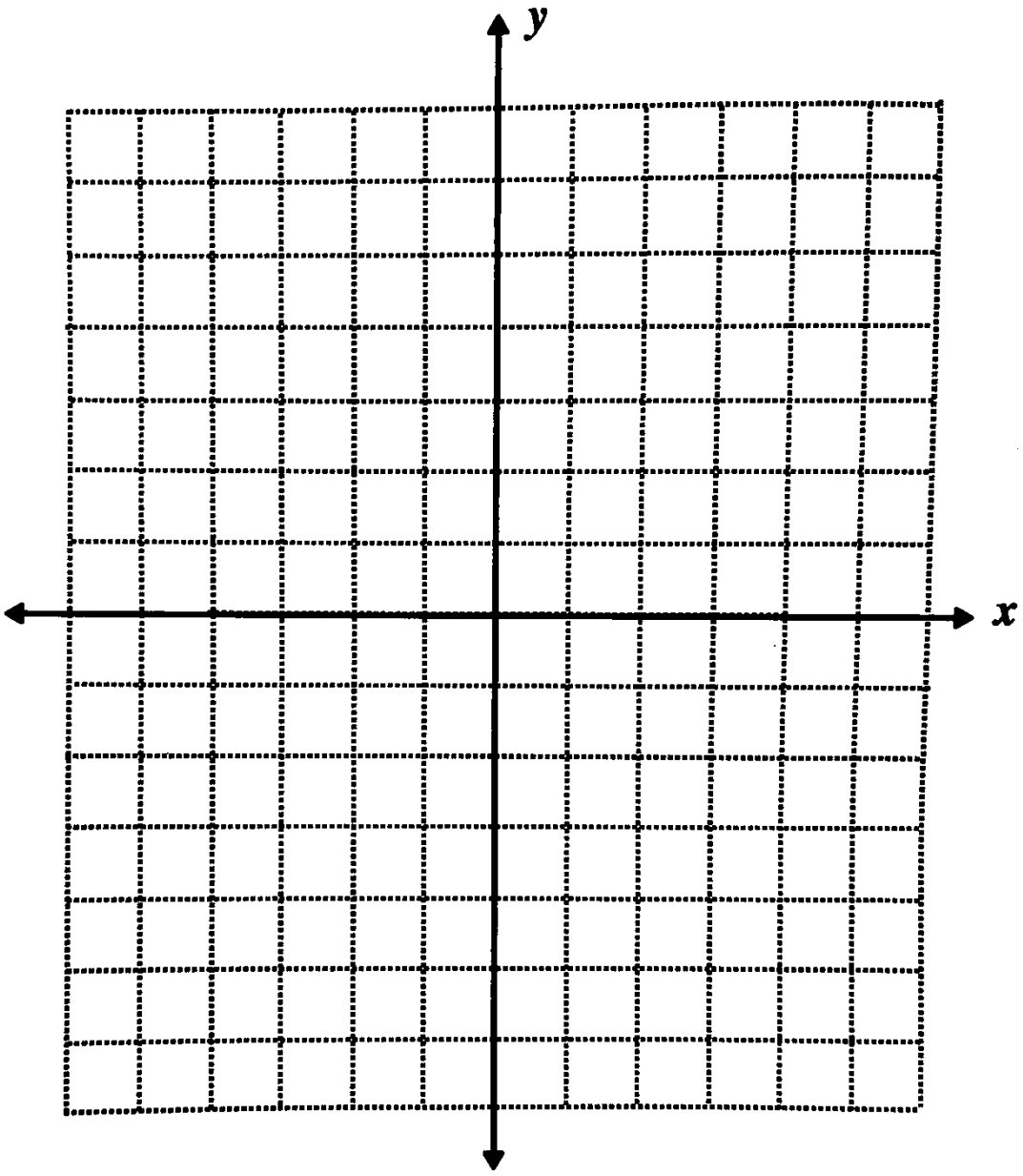
Circle the letter of the correct answer: **submit this with your answer sheet**

Question				
1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

ANNEXURE B

QUESTION 10.2.2

NAME:……...CLASS……



ANNEXURE C

QUESTION 10.4

NAME:……...CLASS……