



GAUTENG PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

EKURHULENI NORTH DISTRICT

MATHEMATICS

GRADE 8

NOVEMBER CONTROL TEST 2022

DATE: 14 NOVEMBER 2022

TIME: $1\frac{1}{2}$ HOURS

TOTAL: 60

NAME OF LEARNER: _____ **GRADE 8:** _____

Question number	1	2	3	4	5	6	7	8	9	10	11	Total
Total marks	5	6	3	8	3	2	5	7	7	7	7	60
Learner marks												
Moderated marks												

This question paper consists of **14** pages and **11** questions.

INSTRUCTIONS:

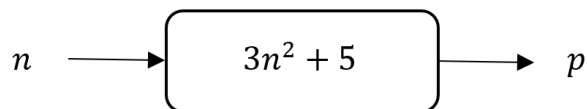
1. Section A consists of 5 multiple choice questions, answer the questions on the answer sheet provided.
2. Section B to E questions must be answered in the space provided on this paper.
3. Clearly show all calculations.
4. Calculators are allowed.
5. If necessary, round answers off to 2 decimal places, unless stated otherwise.
6. Diagrams are not necessarily drawn to scale.
7. It is in your best interest to write neatly and legibly.

SECTION A: MULTIPLE CHOICE QUESTIONS

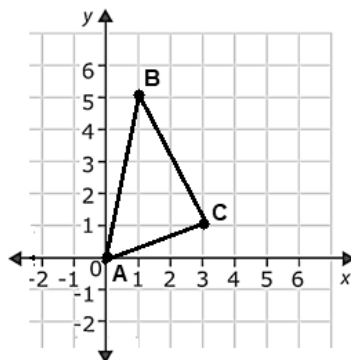
QUESTION 1

Choose the correct answer. Circle the letter of the correct answer on the **ANSWER SHEET** provided on **page 4**. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

- 1.1. Choose the correct statement that applies to the flow diagram given below.



- A) When the input is 3, the output is 5
B) When the input is -2 , the output is -7
C) When the input is 3, the output is 32
D) When the input is -2 , the output is -17 (1)
- 1.2. A triangle, drawn on the Cartesian Plane, has vertices A(0 ; 0), B(1 ; 5) and C(3 ; 1).



If the triangle is enlarged by a scale factor of 2, the new position of C will be given by the coordinate ...

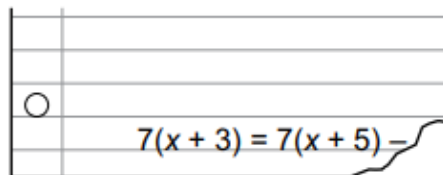
- A) C'(6 ; 2)
B) C'(5 ; 3)
C) C'(1 ; -1)
D) C'(2 ; 6) (1)
- 1.3. The additive inverse of -39 is ...
- A) -93
B) $-(-39)$
C) 93
D) $\frac{1}{39}$ (1)

- 1.4.** The perimeter of a rectangular piece of paper is 56 cm. If the length is three times its width, what is its width?

A) 3 cm
B) 14 cm
C) 8 cm
D) 7 cm

(1)

- 1.5.** Lolo is solving an equation at the bottom of a page. The corner of the page where the equation is written is torn off as shown below.



$$7(x + 3) = 7(x + 5) -$$

Lolo knows that only one number was torn off. What is the missing number?

A) 2
B) 14
C) 21
D) 35

(1)

[TOTAL: 5]

ANSWER SHEET

CIRCLE YOUR ANSWERS FROM SECTION A IN THE GRID BELOW AS SHOWN IN THE EXAMPLE:

Example:	A	(B)	C	D
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

Subtotal Question 1= [5×1]

SECTION B: NUMBERS, OPERATIONS AND RELATIONSHIPS

QUESTION 2

2.1 Simplify the following without the use of a calculator. Show all your calculations.

2.1.1

$$\frac{3}{4} \times \frac{4}{5} - 1\frac{2}{5}$$

		(2)

2.1.2

$$0,35 + 0,2 \div 0,1$$

		(2)

2.1.3

$$-5 \times (-8 + 2)$$

		(2)

[TOTAL: 6]

SECTION C: PATTERNS, FUNCTIONS AND ALGEBRA

QUESTION 3

3.1 The geometric pattern below is made using matchsticks.

Shape 1



Shape 2



Shape 3



3.1.1 Write down an algebraic rule that describes the number pattern.

		(1)

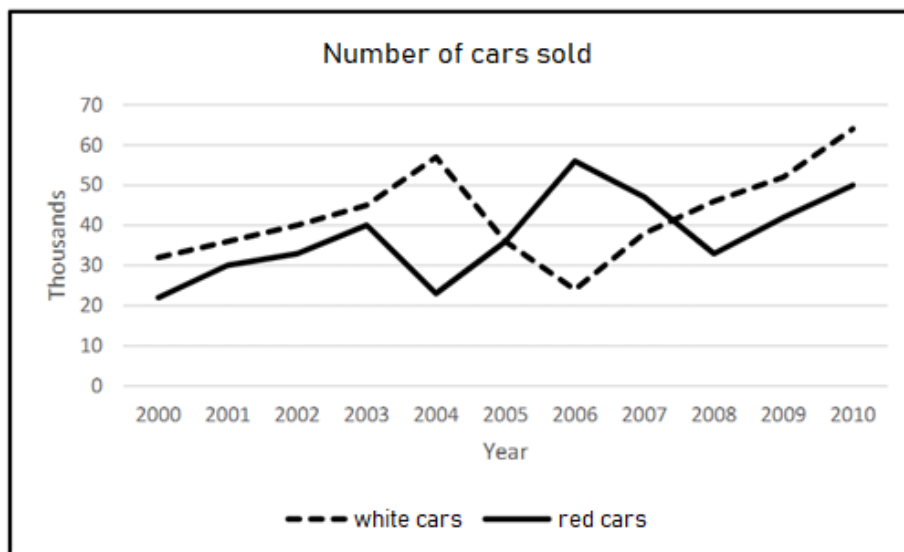
3.1.2 Using your answer from question 3.1.1, determine the number of matchsticks that will make up shape number 29.

		(2)

[TOTAL: 3]

QUESTION 4

4.1 The graph below represents the number of white cars and red cars sold by Aphiwe's car company over a 10 - year period.



4.1.1 Are the graphs linear or non-linear?

		(1)
--	--	-----

4.1.2 What is the minimum number of red cars sold?

		(1)
--	--	-----

4.2 Consider the equation and the corresponding table below.

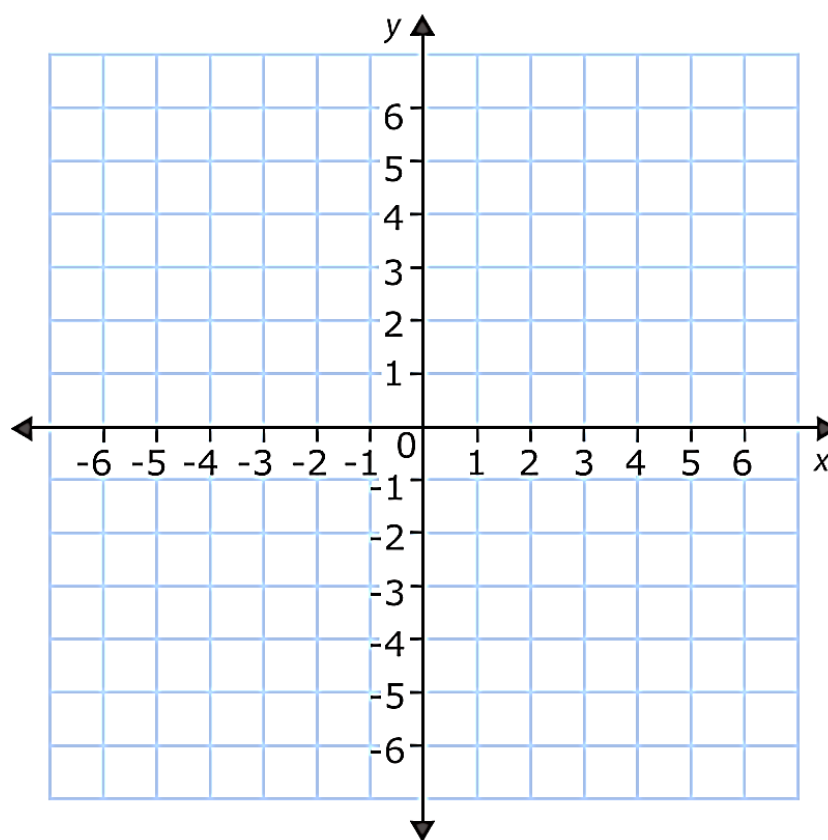
$$y = 2x - 3$$

4.2.1 Complete the table by writing down the values for y .

(3)

x	-1	0	1
y			

4.2.2 Sketch the graph of $y = 2x - 3$ on the Cartesian Plane provided below.



(2)

4.2.3 Is the graph increasing or decreasing?

		(1)

[TOTAL: 8]

QUESTION 5

5.1 Simplify the following expressions.

5.1.1

$$\sqrt{x^2 y^6}$$

		(1)

5.1.2

$$8y^2 + 5x - 3xy - 6y^2 - 5x$$

		(2)

[TOTAL: 3]

QUESTION 6

6.1 Given the equation:

$$3(2x - 5) = 9x$$

Solve for x , show all your calculations.

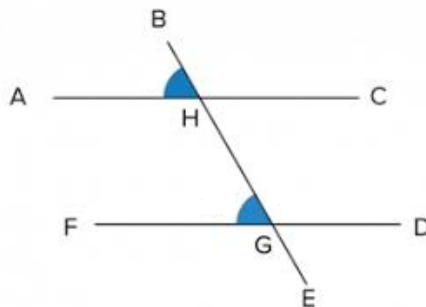
		(2)

[TOTAL: 2]

SECTION D: SPACE AND SHAPE (GEOMETRY)

QUESTION 7

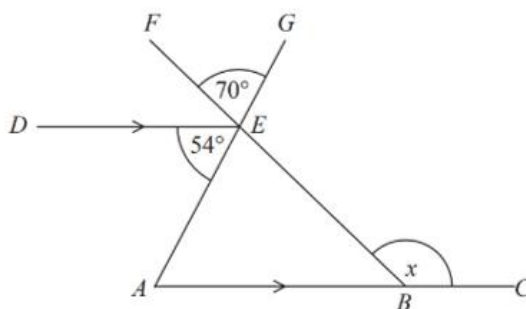
7.1 In the diagram below, $\hat{AHB} = \hat{FGH}$.



What is the relationship between the two straight lines, AC and FD?

		(1)

7.2 In the diagram below, $\hat{FEG} = 70^\circ$, $\hat{DEA} = 54^\circ$ and $DE \parallel AC$.



Determine with reasons, the value of x .

Statement	Reason

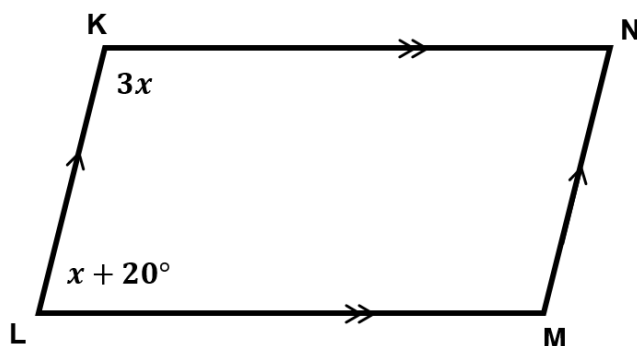
(4)

[TOTAL: 5]

QUESTION 8

8.1 In the figure below KLMN is a parallelogram.

$$\hat{K} = 3x \text{ and } \hat{L} = x + 20^\circ$$



8.1.1 Determine with reasons the value of x .

Statement	Reason

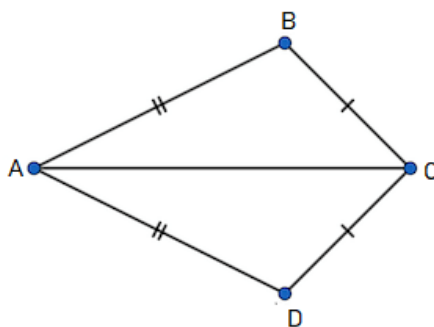
(3)

8.1.2 Determine with reasons the size of $\hat{N}$.

Statement	Reason

(2)

8.2 In the diagram below, ABCD is a kite.



Is $\triangle ABC$ congruent or similar to $\triangle ADC$? Give a reason for your answer.

		(2)

[TOTAL: 7]

QUESTION 9

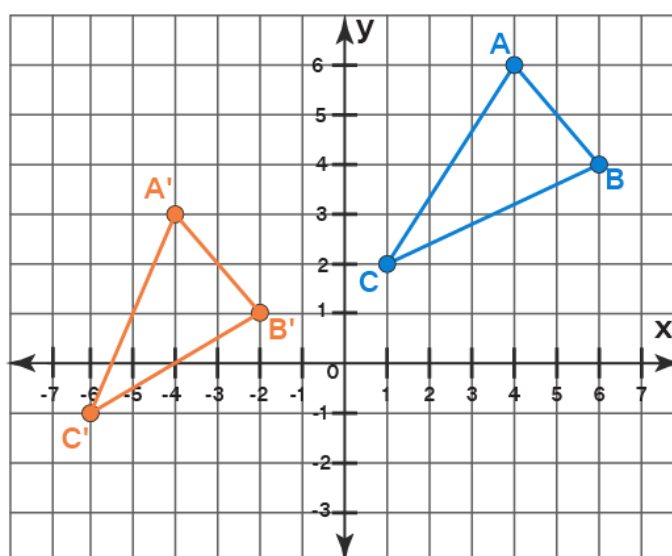
9.1 If A (4 ; 5), a point on the Cartesian plane, is reflected about the y-axis, write down the coordinates of A', the image of A.

		(2)

9.2 Write down the coordinates of B', if point B(2 ; 1) is translated 5 units to the left and 3 units down.

		(2)

9.3 Use the diagram below to answer the questions that follow.



9.3.1 State the type of transformation represented in the diagram.

		(1)

9.3.2 Write the algebraic rule that describes the transformation of triangle ABC to A'B'C'.

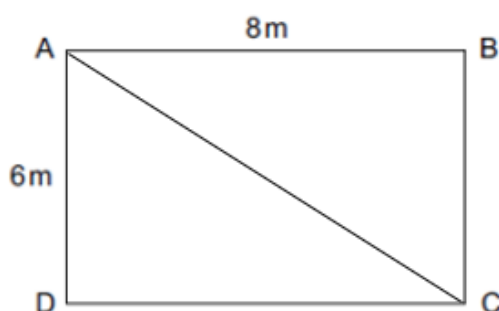
		(2)

[TOTAL: 7]

SECTION E: MEASUREMENT

QUESTION 10

10.1 ABCD is a rectangle.



Mckayla calculates the length of the diagonal AC as follows:

$$\begin{aligned}
 8^2 - 6^2 &= AC^2 \\
 \sqrt{28} &= AC \\
 \sqrt{28} &= 5.29 \text{ or } -5.29 \\
 AC &= 5.29
 \end{aligned}$$

10.1.1 Mckayla's calculation is incorrect.

Indicate the error that Mckayla made in her calculation.

		(1)

10.1.2 Calculate the length of the diagonal AC.

		(3)

10.2 A triangle PQR has a perimeter of 20 cm. $PQ = 7$ cm and $QR = 4$ cm.

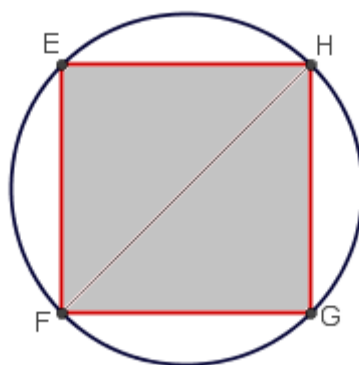
Is triangle PQR a right-angled triangle? Show all your calculations to prove your answer.

		(3)

[TOTAL: 7]

QUESTION 11

11.1 In the diagram below, Nina has to calculate the area inside the circle that **is not shaded**.



She is given the following information.

Diagram information:

EFGH is a square

EH = 2 cm

Area of circle = πr^2

Area of square = s^2

$\pi = \frac{22}{7}$

Nina writes down the steps for her calculations as follows:

1. Calculate the length of the diagonal of the square.
2. Use the length of the diagonal to calculate the area of the circle.
3. Calculate the area of the square
4. Find the difference in the areas of the two shapes.

11.1.1 Use Nina's steps to calculate the area inside the circle that is **not shaded**.

		(7)

[TOTAL: 7]

GRAND TOTAL: 60

