



**GENERAL EDUCATION AND TRAINING (GET)**

GRADE 8

**MATHEMATICS**

**NOVEMBER 2025 TEST PAPER 1**

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|                           |                            |                       |                  |
|---------------------------|----------------------------|-----------------------|------------------|
| <b>NAME &amp; SURNAME</b> | <i>Stanmorephysics.com</i> |                       |                  |
| <b>SCHOOL</b>             |                            |                       |                  |
| <b>CLASS e.g. 8 C</b>     |                            | <b>DURATION</b>       | <b>1,5 HOURS</b> |
| <b>MARKS</b>              | <b>60</b>                  | <b>MARKS OBTAINED</b> |                  |

**INSTRUCTIONS TO CANDIDATES**

1. This paper consists of 11 questions. **Answer all the questions.**
2. This question paper consists of 13 pages excluding the cover page.
3. **Section A** items are multiple choice questions.
4. **Section B** items are free response questions.
5. Use the spaces provided to write your responses.
6. Write neatly and legibly. Do not write in a small box
7. Show all your working.
8. Calculators may not be used, unless stated otherwise

Circle the letter of the correct answer. Start by doing your calculations.

1.1. Which one of the following numbers is an irrational number? (1)

A.  $\sqrt[3]{8}$       B. 8      C. 0      D.  $\sqrt{18}$

1.2. Which word best describes  $-4$ ? (1)

A. Irrational      B. Non-real      C. Rational      D. Undefined

1.3  $(4 \times -3) \times 9 = 4 \times (-3 \times 9)$  is an example of: (1)

A. Associative property      B. Commutative property  
C. Distributive property      D. All the above

1.4 The multiplicative inverse of 39 is ... (1)

A.  $> -93$       B.  $\frac{1}{39}$       C. 93      D.  $-\frac{1}{39}$

1.5 The value of  $(2^2 \times 3^2)^2 =$  (1)

A. 169      B. 144      C. 1 200      D. 1 296

1.6  $y = 2x + 1$ . If the input  $x = -1$ , then  $y = \dots$ ? (1)

A. -1      B. 1      C. -3      D. 3

1.7 Given the pattern:  $-32; -16; -8; -4; \dots$  The common ratio is (1)

A. -2      B. 2      C.  $-\frac{1}{2}$       D.  $\frac{1}{2}$

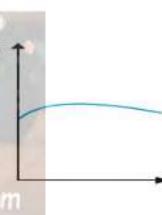
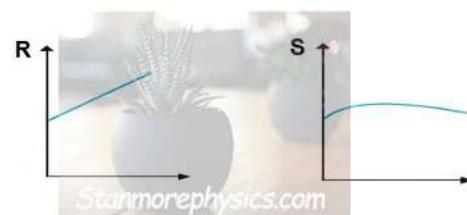
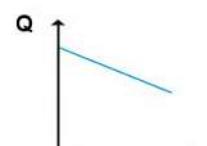
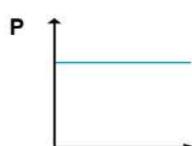
1.8  $8x^3 - 2x^2 - 15$ . What are the exponents of the expression? (1)

A. 8 and 3      B. 3 and 2      C. -2 and 2      D. -15

1.9 Given:  $(x-2) = -47$ . The value of  $x$  is \_\_\_\_\_ (1)

A. -45      B. 45      C. -49      D. 49

1.10



In the graphs, time is represented on the horizontal axis, and petrol price on the vertical axis. Which graph(s) show an increase in price at a constant rate?

A. Graph P and Graph R      B. Graph S  
C. Graph R      D. Graph Q and Graph S

QUESTION 2

[12]

2.1. Use prime factorization to determine the LCM of 92 and 648. (3)



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2.2. A certain distance is covered in 6 hours at an average speed of 120 km/h. (3)

How long will it take to cover the distance at an average of 90 km/h?



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2.3 Nomsa's father wants to buy a new car. He can pay a deposit of R55 000.

2.3.1 If all the cars were sold on hire purchase with 20% deposit, what (2) would be the price of a car he could afford to buy?

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2.3.2 After paying the 20% deposit, calculate the total amount of money he (1) must still pay.

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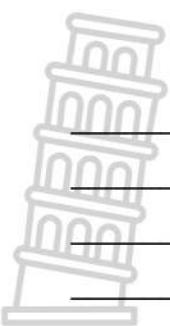
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2.3.3 If the interest rate was 10% per annum on simple interest, calculate (3)

the monthly instalment if he signed a hire-purchase agreement to pay the balance in 24 equal monthly instalments.



**QUESTION 3**

**[8]**

3.1 Insert brackets to make the following statement true:  $8 \div 2 \times 4 - 4 = 0$  (1)

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3.2 Simplify:  $-2^2 \times \sqrt[3]{-1} + 7^3 \div (\sqrt{49})$ . Show your working. (4)

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3.3 Calculate the sum of the additive and multiplicative inverse of  $\frac{14}{8}$ . (3)

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**QUESTION 4**

**[9]**

4.1 Simplify:  $\sqrt[3]{\left(\frac{1}{3}\right)^2} + 5 \times \left(\frac{1}{3}\right)^3$ . Show your working. (3)

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4.2 The price of petrol per litre is set to increase by 6% next month. If the current petrol price is R28,24 per litre, what will be the new petrol price next month? (3)



4.3 Aphiwe receives a monthly pocket of R500. He spends it follows:  $\frac{23}{200}$  on fat cakes,  $\frac{273}{500}$  on cell phone data and  $\frac{56}{200}$  on juice. Determine the amount that is unused. (3)



**QUESTION 5**

[8]

5.1 Simplify:  $4,45 \times 0,5$ . Show your working and not use a calculator. (3)

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5.2 Calculate the value of  $(0,02)^2 + \sqrt[3]{(0,027)}$  without using a calculator. (3)

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5.3 Lerato is using a recipe for banana muffins but wants to make 1,5 times the given amount. If the recipe lists 0,25 litres of milk in the ingredients, how much milk should Lerato use for her muffins? (2)

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6.1 Solve problems without using a calculator. Show all your working.

6.1.1  $\sqrt[3]{-27} + (-\sqrt{64}) \times -4^2 \div 2^3$  (4)

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6.1.2  $x \times x^2 \div \sqrt[3]{125x^9}$  (3)

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6.2 Represent 59 600 000 and 59 599 000 in a scientific notation and write the inequality sign to indicate a bigger number in scientific notation. (2)

6.3 A bacterial culture doubles every hour. If there are 50 bacteria initially, how many bacteria will there be after 6 hours? Use  $P(t) = P \times 2^t$ , where  $P(t)$  is the population after time,  $P$  is the initial population, and  $t$  is the time in hours. (3)

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7.1 Given the sequence: 4; 6; 10; 16; 24; ...

7.1.1 Write down the next two terms. (2)

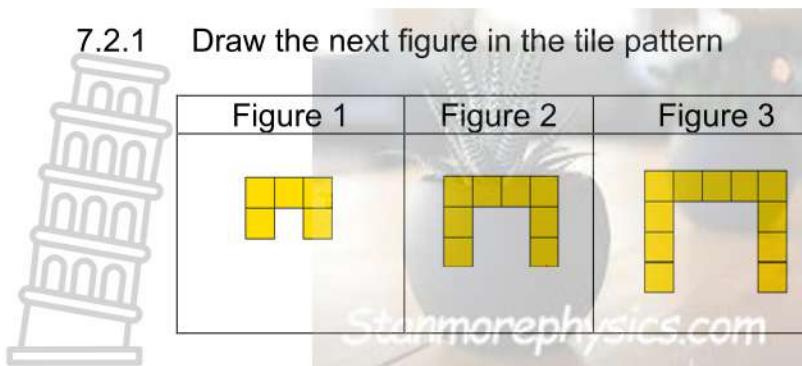
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7.1.2 Describe the rule in words. (1)

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7.2 Study the pattern below and answer questions that follow.



7.2.1 Draw the next figure in the tile pattern (1)

| Figure 1 | Figure 2 | Figure 3 | Figure 4 |
|----------|----------|----------|----------|
|          |          |          |          |

7.2.2 Describe how the pattern is formed. (1)

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\_\_\_\_\_

7.2.3 Complete the table by determining the missing values. (2)

|                        |   |   |    |   |    |
|------------------------|---|---|----|---|----|
| <b>Pattern Number</b>  | 1 | 2 | 3  | 7 |    |
| <b>Number of tiles</b> | 5 | 8 | 11 |   | 32 |

7.3 Given the pattern: 2; 9; 28; ...

7.3.1 Determine the general rule for the pattern (2)

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7.3.2 Use the rule in 7.3.1 to determine the 10<sup>th</sup> term (1)

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## QUESTION 8

[10]

8.1 Given that  $x = -3$  and  $y = 5$ , determine the numerical value of  $3x^2 + 4xy$  (3)

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8.2 Simplify the following expressions:

8.2.1 
$$\frac{18x^3 - 12x^2 + 6x}{3x}$$
 (3)

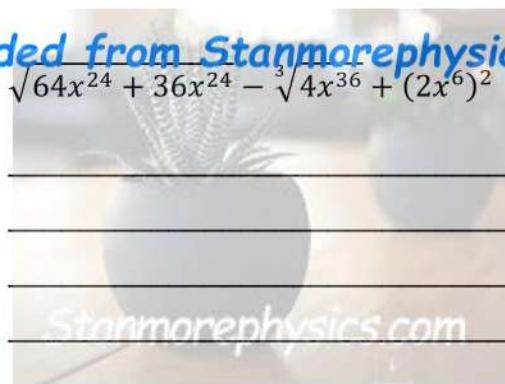
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$$8.2.2 \quad \sqrt[6]{64x^{24} + 36x^{24}} - \sqrt[3]{4x^{36} + (2x^6)^2}$$

(4)

**QUESTION 9****[9]**

9.1 Given below is a table of ordered pairs of the equation,  $y = -5x + 9$ . (3)

Determine the value of  $a, b$  and  $c$ .

|     |       |    |       |   |    |     |       |
|-----|-------|----|-------|---|----|-----|-------|
| $x$ | -3    | -2 | $b =$ | 1 | 2  | 7   | 9     |
| $y$ | $a =$ | 19 | 9     | 4 | -1 | -26 | $c =$ |

9.2 Solve for  $x$ :  $-3(2x + 3) = 3$  (3)

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9.3 Solve for  $x$ :  $2x^3 - 26 = 224$  (3)

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**QUESTION 10****[5]**

10. The relation between input and output values in a function is given equation  $y = 3(x + 2)$ .

10.1.1 Give a verbal description of how the input and output numbers are related. (2)

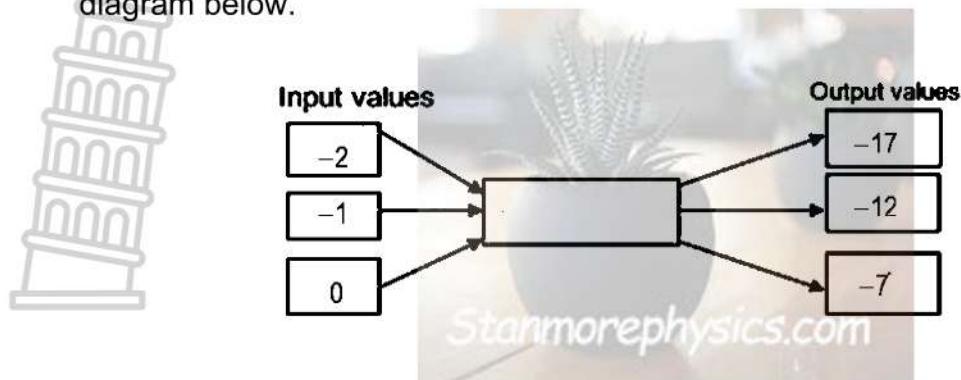
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10.1.2 If the input,  $x = 0$ , then what is the value of  $y$ , the output? (1)

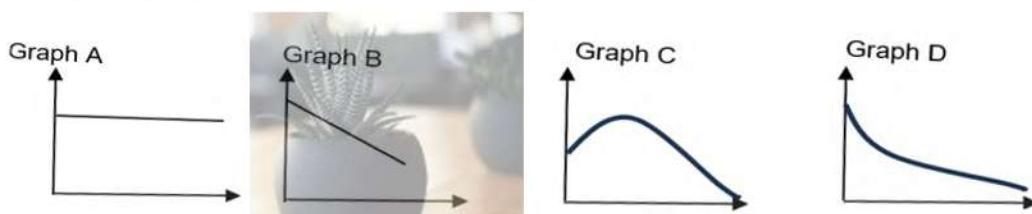
10.2 Determine general rule in terms of  $x$ , input, and  $y$ , output, for the flow diagram below. (2)



**QUESTION 11**

[07]

11.1 Study the graphs below and answer questions that follow.



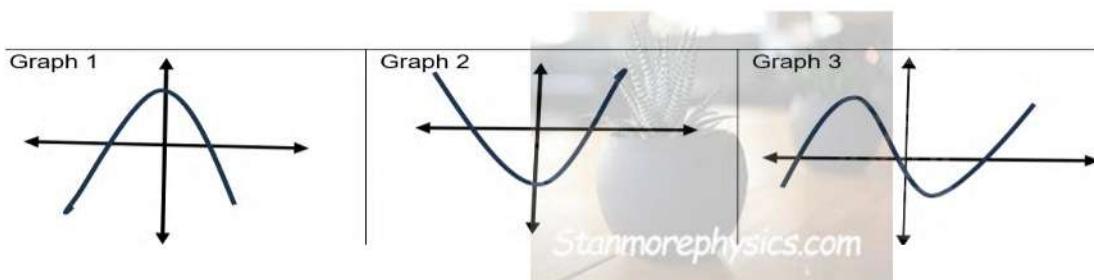
11.1.1 Write down the letter of a linear graph. (1)

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11.1.2 Write down the letter of the graph where the quantity is decreasing and the rate of change is not constant. (1)

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11.2 Consider the graphs and indicate which graph corresponds with the given description below.



11.2.2 Determine which graph has only a minimum value? (1)

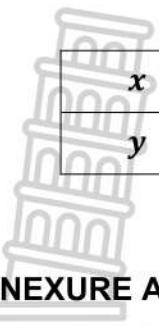
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11.2.2 Which graph changes from increasing to decreasing and then from decreasing to increasing? (1)

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11.3 Plot the ordered pairs given in the table below and use them to draw a graph. (3)

Use Annexure A



|     |    |    |   |   |   |    |
|-----|----|----|---|---|---|----|
| $x$ | -2 | -1 | 0 | 1 | 2 | 3  |
| $y$ | -5 | -2 | 1 | 4 | 7 | 10 |

**ANNEXURE A: 11.3**

