



STANMOREPHYSICS

GRADE 9 • GEC-STYLE PRACTICE

MATHEMATICS

PAPER 1 - Numbers, Algebra and Functions

Maximum marks	75
Writing time	2 hours 30 minutes
Reading time	15 minutes (additional)
Practice edition	2026 - Set A

Learner: _____ Class: _____

ORIGINAL PRACTICE RESOURCE

Mock South African Grade 9 GEC assessment. Not affiliated with the Department of Basic Education.

INSTRUCTIONS TO THE LEARNER

1. Allow 15 minutes to read the assessment before starting the timed section.
2. Read all questions carefully and answer every question.
3. Use the separate Stanmorephysics answer booklet for your answers.
4. Section A consists of 60 multiple-choice questions. Choose ONE option (A, B, C or D) for each question.
5. Section B is worth 15 marks. Show full calculations and give reasons or units where required.
6. You may use a non-programmable scientific calculator unless the question states otherwise.
7. Diagrams are schematic and are not necessarily drawn to scale.



The assessment begins on the next page.

Do not turn the page until instructed to do so.

SECTION A - MULTIPLE CHOICE

Questions 1–60. Each question carries ONE mark. Write only the letter of your chosen answer.

1. Which number is irrational?

- A $\sqrt{11}$
- B -8
- C $\sqrt{49}$
- D $0,125$

(1)

2. Find the lowest common multiple of 16 and 24.

- A 8
- B 48
- C 96
- D 32

(1)

3. Find the highest common factor of 54 and 90.

- A 18
- B 27
- C 9
- D 6

(1)

4. At a school event the ratio of learners to adults is 7 : 2. If 81 people attend, how many are learners?

- A 72
- B 63
- C 54
- D 18

(1)

5. A delivery van covers 216 km in 2 hours 24 minutes. What is its average speed?

- A 80 km/h
- B 108 km/h
- C 216 km/h
- D 90 km/h

(1)

6. R4 000 earns compound interest at 5% per year for two years. What is the interest earned?

- A R200
- B R4 410
- C R410
- D R400

(1)

7. Which expression illustrates the associative property of addition?

- A $(2 + 5) + 8 = 2 + (5 + 8)$
- B $6 + 0 = 6$
- C $3(4 + 2) = 12 + 6$
- D $2 + 5 = 5 + 2$

(1)

8. Calculate: $-6 + 4(3 - 8)$.

- A -10
- B 26
- C -14
- D -26

(1)

9. Which number is the additive inverse of -13?

- A 13
- B 0
- C $\frac{1}{13}$
- D -13

(1)

10. Evaluate: $(-18 \div 3) + 5^2$.

- A 19
- B 11
- C 31
- D -31

(1)

11. Simplify: $\sqrt{144} - 2^3$.

- A 4
- B 20
- C 2
- D 10

(1)

12. Calculate: $\sqrt[3]{-125} + \sqrt{81}$.

- A -14
- B -4
- C 14
- D 4

(1)

13. Simplify: $a^4 \times a^3$.

- A a^{12}
- B a^7
- C $2a^7$
- D a

(1)

14. Simplify: $m^8 \div m^3$ ($m \neq 0$).

- A m^{24}
- B m^{11}
- C m^5
- D $m^{8/3}$

(1)

15. Evaluate: $(3^2)^3 \div 3^4$.

- A 27
- B 9
- C 81
- D 3

(1)

16. Which expression is equivalent to $4x^0 + 2x$, where $x \neq 0$?

- A $4x + 2$
- B $6x$
- C $4 + 2x$
- D 6

(1)

17. Find the next term: 5; 11; 17; 23; ...

- A 27
- B 29
- C 35
- D 30

(1)

18. A pattern contains 2; 6; 12; 20; 30; What is the sixth term?

- A 36
- B 48
- C 40
- D 42

(1)

19. What is the rule for the sequence 4; 12; 36; 108; ...?

- A Add 8 each time
- B Multiply by 3 each time
- C Add the previous two terms
- D Multiply by 2 each time

(1)

20. The n th term of a number pattern is $T_n = 5n - 2$. Calculate T_8 .

- A 42
- B 40
- C 33
- D 38

(1)

21. A table has n - values 1, 2, 3, 4 and T_n - values 9, 6, 3, 0. Which rule fits?

- A $T_n = 3 - n$
- B $T_n = 12 - 3n$
- C $T_n = 9n$
- D $T_n = 3n + 6$

(1)

22. Which sequence has a non-zero constant second difference?

- A 1; 4; 9; 16
- B 5; 5; 5; 5
- C 3; 6; 9; 12
- D 2; 4; 8; 16

(1)

23. Identify the coefficient of x^2 in $-7x^2 + 3x - 9$.

- A 7
- B -9
- C -7
- D 3

(1)

24. How many terms are in $2p^2 - 5p + 8$?

- A 1
- B 3
- C 4
- D 2

(1)

25. Simplify: $6x - 4 + 3x + 10$.

- A $9x - 14$
- B $3x + 6$
- C $9x + 14$
- D $9x + 6$

(1)

26. Expand: $-3(2y - 5)$.

- A $-3y + 15$
- B $-6y + 15$
- C $6y - 15$
- D $-6y - 15$

(1)

27. Simplify: $2a(a + 4) - 3a$.

- A $2a^2 + 11a$
- B $2a + 5$
- C $2a^2 + a$
- D $2a^2 + 5a$



(1)

28. Expand: $(x + 4)(x + 3)$.

- A $x^2 + x + 12$
- B $x^2 + 12$
- C $x^2 + 12x + 7$
- D $x^2 + 7x + 12$

(1)

29. Evaluate $3t^2 - 2t$ when $t = -2$.

- A 8
- B -16
- C 12
- D 16

(1)

30. Factorise: $9r^2 - 16$.

- A $(3r - 8)(3r + 2)$
- B $(9r - 4)(r + 4)$
- C $(3r - 4)(3r + 4)$
- D $(9r - 16)(r + 1)$

(1)

31. Factorise: $x^2 + 9x + 20$.

- A $(x + 20)(x + 1)$
- B $(x + 10)(x + 2)$
- C $(x - 5)(x - 4)$
- D $(x + 5)(x + 4)$

(1)

32. Factorise completely: $3p^2 - 12p$.

- A $p(3p - 4)$
- B $3p(p + 4)$
- C $3(p - 12)$
- D $3p(p - 4)$

(1)

33. Simplify $(x^2 - 25)/(x - 5)$, where $x \neq 5$.

- A $x - 5$
- B 5
- C $x^2 + 5$
- D $x + 5$



(1)

34. Solve: $3x + 7 = 28$.

- A 5
- B 12
- C 7
- D 9

(1)

35. Solve: $5(y - 2) = 15$.

- A 3
- B 7
- C 1
- D 5

(1)

36. Solve: $2a - 9 = a + 4$.

- A -13
- B 5
- C 13
- D -5

(1)

37. Solve: $4^x = 64$.

- A 16
- B 2
- C 4
- D 3

(1)

38. Solve: $(t - 6)(t + 1) = 0$.

- A $t = 6$ or $t = -1$
- B $t = -1$ only
- C $t = 6$ only
- D $t = -6$ or $t = 1$

(1)

39. Which equation represents "five more than double a number is 23"?

- A $2x + 5 = 23$
- B $5x + 2 = 23$
- C $5(2x) = 23$
- D $2(x + 5) = 23$

(1)

40. A rectangle is 3 cm longer than its width. Its area is 40 cm^2 . What is its width?

- A 8 cm
- B 5 cm
- C 10 cm
- D 4 cm

(1)

41. Solve: $x^2 - 7x + 12 = 0$.

- A $x = 1$ or 12
- B $x = -3$ or -4
- C $x = -3$ or 4
- D $x = 3$ or 4

(1)

42. The formula is $P = 6n - 5$. Find n when $P = 37$.

- A 8
- B 6
- C 7
- D 5

(1)

43. Solve: $(x + 2)^2 = 25$.

- A $x = -7$ only
- B $x = 3$ only
- C $x = 5$ or -5
- D $x = 3$ or -7

(1)

44. For $f(x) = x^2 - 4$, which ordered pair lies on its graph?

- A (0; 4)
- B (1; -2)
- C (2; 4)
- D (3; 5)

(1)

45. A rule doubles the input then subtracts 3. What is the output when the input is -4 ?

- A 5
- B 11
- C -11
- D -5

(1)

46. Which equation has gradient 4 and y-intercept -1 ?

- A $y = -4x - 1$
- B $y = 4x - 1$
- C $y = x - 4$
- D $y = -x + 4$

(1)

47. For $y = -2x + 6$, what is y when $x = 5$?

- A 16
- B 4
- C -4
- D -16

(1)

48. Find the x-intercept of $y = 3x - 12$.

- A (0; 4)
- B (4; 0)
- C (-4; 0)
- D (0; -12)

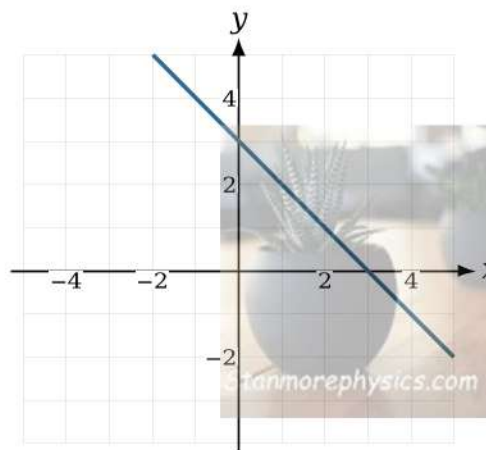
(1)

49. The values of y for $x = 0, 1, 2$ are 7, 10, 13 respectively. Which rule fits?

- A $y = x + 7$
- B $y = 7x + 3$
- C $y = 3x + 7$
- D $y = 10x - 3$

(1)

50. The graph shown represents $y = -x + 3$. Which point is on the line?



- A (3; 3)
- B (1; 2)
- C (1; 4)
- D (0; -3)

(1)

51. Which graph describes a directly proportional relationship?

- A A straight line through (0; 0)
- B A curved line
- C A line crossing the y-axis at 5
- D A horizontal line above the x-axis

(1)

52. What is the y-intercept of $2y = 8x + 10$?

- A $(-5; 0)$
- B $(5; 0)$
- C $(0; 10)$
- D $(0; 5)$

(1)

53. Find the gradient of the line joining $(-1; 2)$ and $(3; 10)$.

- A 2
- B 4
- C 8
- D $\frac{1}{2}$

(1)

54. What is the equation of a horizontal line through $(0; -6)$?

- A $x = -6$
- B $y = -6$
- C $x = 6$
- D $y = 6$

(1)

55. Which mapping gives a linear function?

- A $x \mapsto 5x - 2$
- B $x \mapsto 2^x$
- C $x \mapsto x^2 + 1$
- D $x \mapsto 1/x$

(1)

56. A taxi charges a base fare of R18 plus R7 per kilometre. Which rule gives the cost C for d kilometres?

- A $C = 25d$
- B $C = 7d - 18$
- C $C = 18 + 7d$
- D $C = 18d + 7$

(1)

57. Two DISTINCT straight lines have gradients 3 and 3. They are ...

- A perpendicular
- B both horizontal
- C necessarily identical
- D parallel

(1)

58. Which coordinate lies on $y = 2x + 1$?

- A (1; 1)
- B (2; 5)
- C (0; 2)
- D (3; 6)

(1)

59. As x increases by 1, the y -values of a line decrease by 4. What is its gradient?

- A 4
- B $-\frac{1}{4}$
- C -4
- D $\frac{1}{4}$

(1)

60. Which line is parallel to $y = 2x + 7$ and has a different y -intercept?

- A $y = x + 7$
- B $y = 2x - 1$
- C $y = -x - 7$
- D $y = -2x + 7$

(1)

SECTION A TOTAL [60]

SECTION B - WRITTEN RESPONSES

Answer all questions. Show calculations, reasons and units where required.

- 61.** For a number pattern, $T_n = 4n + 3$. Calculate T_{12} and show your substitution. (3)
- 62.** Simplify fully: $2x(3x - 4) - (x^2 - 5x)$. (3)
- 63.** A school purchases 4 identical netballs and a R36 delivery fee. The bill is R516. Determine the price of ONE netball. Show your equation. (4)
- 64.** Given the straight line $y = -2x + 4$:
- 64.1 Determine its x-intercept and y-intercept. (2)
- 64.2 Draw its graph on the Cartesian grid in the answer booklet. (3)
- (5)

SECTION B TOTAL [15]

ASSESSMENT TOTAL [75]

END OF PRACTICE PAPER





STANMOREPHYSICS

GRADE 9 • GEC-STYLE PRACTICE

MATHEMATICS

LEARNER ANSWER BOOKLET

Maximum marks	75
Writing time	Use with matching question paper
Reading time	15 minutes (additional)
Practice edition	2026

Learner: _____ Class: _____

Stanmorephysics.com

ORIGINAL PRACTICE RESOURCE

Mock South African Grade 9 GEC assessment. Not affiliated with the Department of Basic Education.

ANSWER BOOKLET - INSTRUCTIONS

Complete the details on the cover and write the letter of each multiple-choice answer in Section A. Show calculations and reasons in Section B.

Write neatly. If you change an answer, cross out the first letter and write the new letter clearly. **SECTION A - ANSWER GRID**

1. _____	21. _____	41. _____
2. _____	22. _____	42. _____
3. _____	23. _____	43. _____
4. _____	24. _____	44. _____
5. _____	25. _____	45. _____
6. _____	26. _____	46. _____
7. _____	27. _____	47. _____
8. _____	28. _____	48. _____
9. _____	29. _____	49. _____
10. _____	30. _____	50. _____
11. _____	31. _____	51. _____
12. _____	32. _____	52. _____
13. _____	33. _____	53. _____
14. _____	34. _____	54. _____
15. _____	35. _____	55. _____
16. _____	36. _____	56. _____
17. _____	37. _____	57. _____
18. _____	38. _____	58. _____
19. _____	39. _____	59. _____
20. _____	40. _____	60. _____

SECTION A TOTAL [60]

SECTION B - WORKING AND RESPONSES

Show your steps and answers in the spaces provided. Attach extra paper if needed.

61. (3 marks)



62. (3 marks)

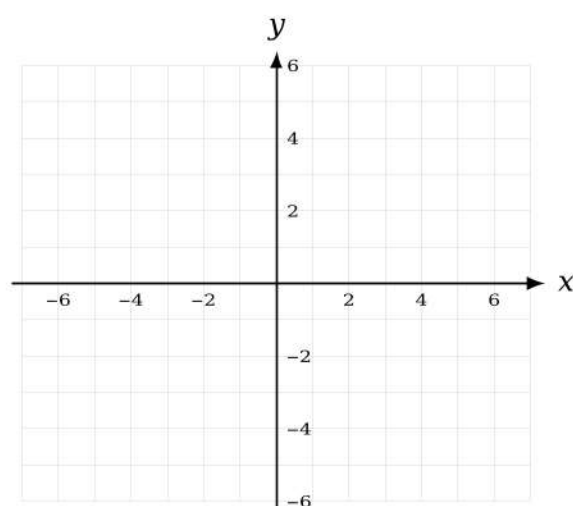


63. (4 marks)



64. (5 marks)

State the coordinates and plot the required points or line on the grid.



SECTION B TOTAL [15]
TOTAL [75]

END OF ANSWER BOOKLET



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MATHEMATICS

MARKING GUIDELINE / MEMORANDUM

Maximum marks	75
Writing time	Teacher use and self-marking
Reading time	15 minutes (additional)
Practice edition	2026

Learner: _____ Class: _____

ORIGINAL PRACTICE RESOURCE

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SECTION A - ANSWER KEY AND CLARIFICATION

Award 1 mark for each correct option. No half marks in Section A.

No.	Key	Correct response	Clarification
1	A	$\sqrt{11}$	$\sqrt{11}$ is not a rational number.
2	B	48	$16 = 2^4$; $24 = 2^3 \times 3$; $\text{LCM} = 2^4 \times 3 = 48$.
3	A	18	$54 = 2 \times 3^3$ and $90 = 2 \times 3^2 \times 5$, so $\text{HCF} = 18$.
4	B	63	There are 9 parts; $81 \div 9 \times 7 = 63$ learners.
5	D	90 km/h	$2\text{ h } 24\text{ min} = 2,4\text{ h}$. Speed = $216 \div 2,4 = 90\text{ km/h}$.
6	C	R410	$4\,000(1,05)^2 - 4\,000 = \text{R}410$.
7	A	$(2 + 5) + 8 = 2 + (5 + 8)$	The grouping changes, but the order stays 2, 5, 8.
8	D	-26	$-6 + 4(-5) = -26$.
9	A	13	$-13 + 13 = 0$.
10	A	19	$-6 + 25 = 19$.
11	A	4	$12 - 8 = 4$.
12	D	4	$-5 + 9 = 4$.
13	B	a^7	When multiplying powers with the same base, add exponents: a^7 .
14	C	m^5	Subtract exponents: $m^{8-3} = m^5$.
15	B	9	$3^6 \div 3^4 = 3^2 = 9$.
16	C	$4 + 2x$	$x^0 = 1$, so the result is $4 + 2x$.
17	B	29	The common difference is 6; next is 29.
18	D	42	These are $n(n + 1)$, hence $T_6 = 6 \times 7 = 42$.
19	B	Multiply by 3 each time	Successive terms have a common ratio of 3.
20	D	38	$T_8 = 5(8) - 2 = 38$.
21	B	$T_n = 12 - 3n$	The outputs decrease by 3, and $T_1 = 12 - 3 = 9$.
22	A	1; 4; 9; 16	The square numbers have first differences 3, 5, 7 and constant second difference 2.
23	C	-7	The coefficient multiplying x^2 is -7.
24	B	3	It has $2p^2$, $-5p$ and 8: three terms.
25	D	$9x + 6$	Collect like terms: $9x + 6$.
26	B	$-6y + 15$	Multiply both terms by -3.
27	D	$2a^2 + 5a$	$2a^2 + 8a - 3a = 2a^2 + 5a$.
28	D	$x^2 + 7x + 12$	Multiply each term: $x^2 + 3x + 4x + 12$.
29	D	16	$3(4) - 2(-2) = 16$.
30	C	$(3r - 4)(3r + 4)$	Difference of squares: $(3r)^2 - 4^2$.
31	D	$(x + 5)(x + 4)$	$5 + 4 = 9$ and $5 \times 4 = 20$.
32	D	$3p(p - 4)$	The common factor is $3p$.
33	D	$x + 5$	$(x - 5)(x + 5)/(x - 5) = x + 5$.
34	C	7	$3x = 21$, so $x = 7$.
35	D	5	$y - 2 = 3$, so $y = 5$.
36	C	13	$2a - a = 4 + 9$; $a = 13$.
37	D	3	$4^3 = 64$.
38	A	$t = 6$ or $t = -1$	By the zero-product rule, $t - 6 = 0$ or $t + 1 = 0$.
39	A	$2x + 5 = 23$	Double the number is $2x$; add 5 to get 23.
40	B	5 cm	$w(w + 3) = 40$ gives $(w + 8)(w - 5) = 0$; positive width = 5 cm.
41	D	$x = 3$ or 4	$(x - 3)(x - 4) = 0$.
42	C	7	$37 + 5 = 6n$; $n = 7$.
43	D	$x = 3$ or -7	$x + 2 = \pm 5$, giving $x = 3$ or -7.
44	D	(3; 5)	$f(3) = 9 - 4 = 5$.
45	C	-11	$2(-4) - 3 = -11$.
46	B	$y = 4x - 1$	In $y = mx + c$, $m = 4$ and $c = -1$.
47	C	-4	$-2(5) + 6 = -4$.
48	B	(4; 0)	Set $y = 0$: $3x = 12$, $x = 4$.

No.	Key	Correct response	Clarification
49	C	$y = 3x + 7$	Each step adds 3 and the initial value is 7.
50	B	(1; 2)	At $x = 1$, $y = 2$.
51	A	A straight line through (0; 0)	Direct proportion is $y = kx$ and its graph passes through the origin.
52	D	(0; 5)	$y = 4x + 5$, so intercept is (0; 5).
53	A	2	$m = (10 - 2)/(3 - (-1)) = \frac{8}{4} = 2$.
54	B	$y = -6$	Every point on a horizontal line has the same y-value.
55	A	$x \mapsto 5x - 2$	$y = 5x - 2$ has degree 1.
56	C	$C = 18 + 7d$	Cost = fixed fee + rate $\times$ distance.
57	D	parallel	Equal gradients mean parallel or coincident; parallel is intended for distinct lines.
58	B	(2; 5)	At $x = 2$, $y = 2(2) + 1 = 5$.
59	C	-4	The gradient is change in y divided by change in x : $-\frac{4}{1} = -4$.
60	B	$y = 2x - 1$	Distinct lines are parallel when their gradients are equal, here 2.

SECTION A TOTAL [60]



SECTION B - MARKING GUIDE

Bracketed allocations [1], [2], etc. identify credit for each step. Accept equivalent mathematically or scientifically correct answers. Award appropriate method and follow-through marks.

61. For a number pattern, $T_n = 4n + 3$. Calculate T_{12} and show your substitution.

Expected answer and allocation (3 marks): $T_{12} = 4(12) + 3[1]; = 48 + 3[1]; = 51[1]$.

62. Simplify fully: $2x(3x - 4) - (x^2 - 5x)$.

Expected answer and allocation (3 marks): $= 6x^2 - 8x - x^2 + 5x[2]; = 5x^2 - 3x[1]$.

63. A school purchases 4 identical netballs and a R36 delivery fee. The bill is R516. Determine the price of ONE netball. Show your equation.

Expected answer and allocation (4 marks): Let p be the price. $4p + 36 = 516[1]; 4p = 480[1]; p = 120[1]; \text{R}120 \text{ per netball } [1]$.

64. Given the straight line $y = -2x + 4$:

64.1 Determine its x-intercept and y-intercept. (2)

64.2 Draw its graph on the Cartesian grid in the answer booklet. (3)

Expected answer and allocation (5 marks): 64.1 x-intercept $(2; 0)[1]$ and y-intercept $(0; 4)[1]$. 64.2 Plot $(0; 4)[1]$ and $(2; 0)[1]$; draw a straight line extending through both points [1].

SECTION B TOTAL [15]

GRAND TOTAL [75]

