GRADE 9 · GEC 2026 PREDICTION

Mathematics Paper 2

Space and Shape (Geometry) · Measurement · Data Handling

TOTAL **75 marks** **TIME** **2 hours (+ 15 minutes reading time)**

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An unofficial prediction paper in the format of the GEC Mathematics Paper 2, following its 2026 scope. It is not set by the Department of Basic Education.

HOW TO USE THIS PREDICTION PAPER

- Write it like the real exam: 15 minutes to read the paper first, then 2 hours to answer it, with a calculator and no notes.
- Section A: do your calculation first, then mark your choice with a cross (X) on the ANSWER SHEET at the end of the paper.
- Section B: show all your working, and give a reason for every statement in geometry. Answers only do not get full marks.
- Mark your own work with the memorandum: every question has a worked answer. Redo every question you got wrong, then watch the video.

INSTRUCTIONS

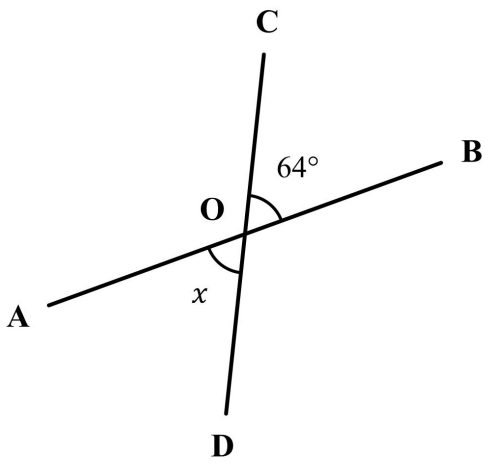
1. Read all the instructions and questions carefully.
2. Answer ALL the questions.
3. This paper consists of SECTION A (45 multiple-choice questions, 45 marks) and SECTION B (8 questions, 30 marks).
4. Answer Questions 48 and 51 on the grids on the ANSWER SHEET.
5. Non-programmable calculators may be used. Use the π key on your calculator.
6. Diagrams are not necessarily drawn to scale.

SECTION A

45 MARKS

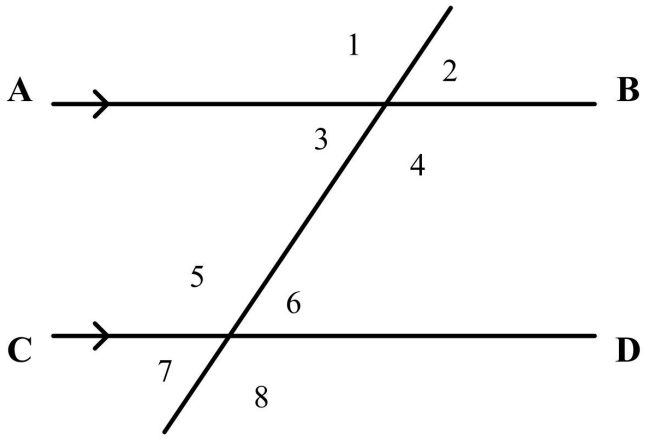
Choose the correct answer. Do your calculation before you choose an option.

1. Straight lines AB and CD intersect at O. Which statement explains why $x = 64°$? (1)



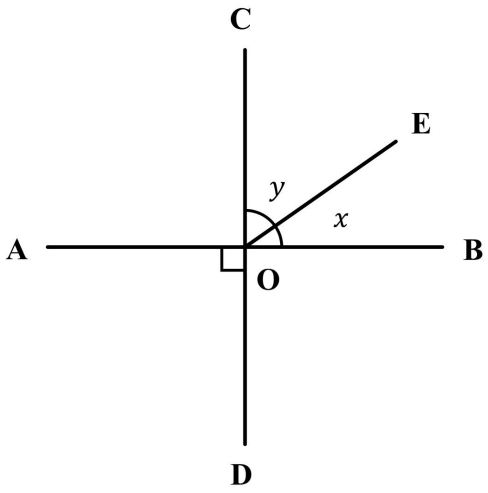
A x and 64° are adjacent angles on a straight line.
B x and 64° are vertically opposite angles.
C x and 64° are corresponding angles.
D x and 64° are complementary angles.

2. In the diagram, AB ∥ CD. Which pair of angles are alternate angles? (1)



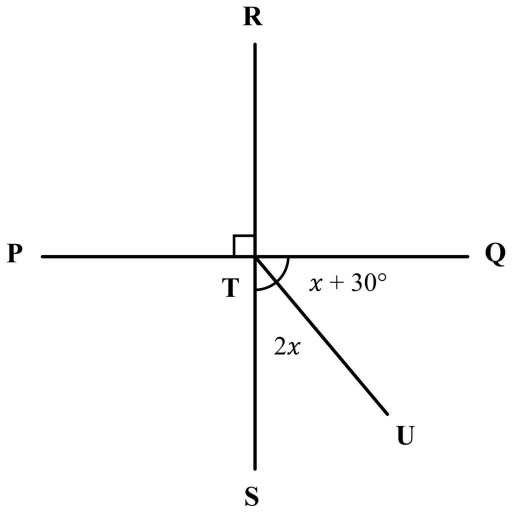
A ∠1 and ∠5 **B** ∠3 and ∠5 **C** ∠1 and ∠4 **D** ∠3 and ∠6

3. AB ⊥ CD at O. Which statement about x and y is true? (1)



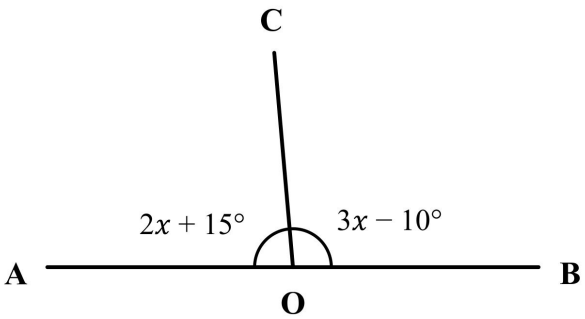
A $x + y = 180°$, because they lie on a straight line
B $x = y$, because they are vertically opposite
C $x + y = 90°$, because AB ⊥ CD
D $x + y = 360°$, because they are angles round a point

4. PQ ⊥ RS at T. Determine the value of x. (1)



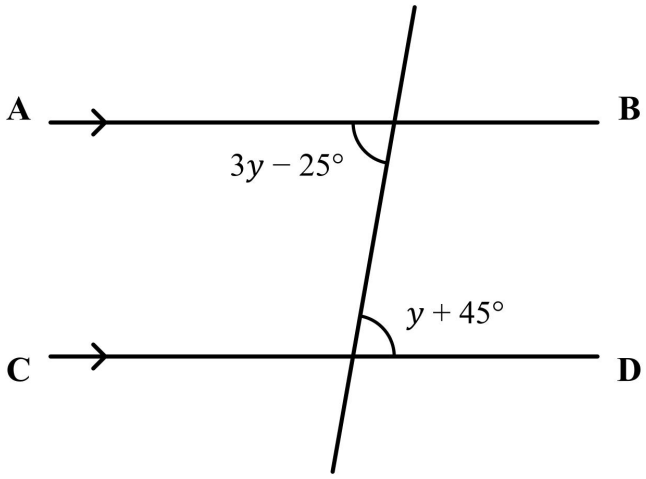
A 50° **B** 30° **C** 20° **D** 40°

5. AOB is a straight line. Determine the value of x. (1)



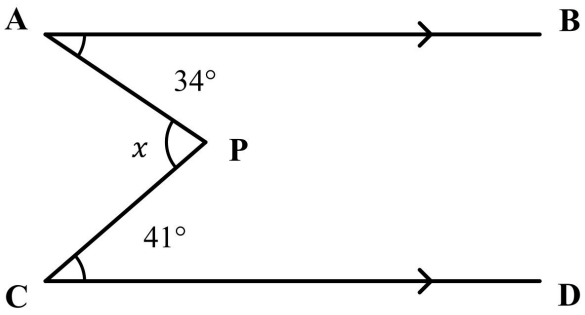
A 36° **B** 17° **C** 37° **D** 35°

6. AB ∥ CD. Determine the value of y. (1)



A 40° **B** 10° **C** 35° **D** 80°

7. AB ∥ CD and P lies between the two lines. Determine the value of x. (1)



A 75° **B** 105° **C** 41° **D** 7°

8. A triangle has angles of 90°, 45° and 45°. Which description is correct? (1)

A an equilateral triangle
B an obtuse-angled scalene triangle
C an acute-angled isosceles triangle
D a right-angled isosceles triangle

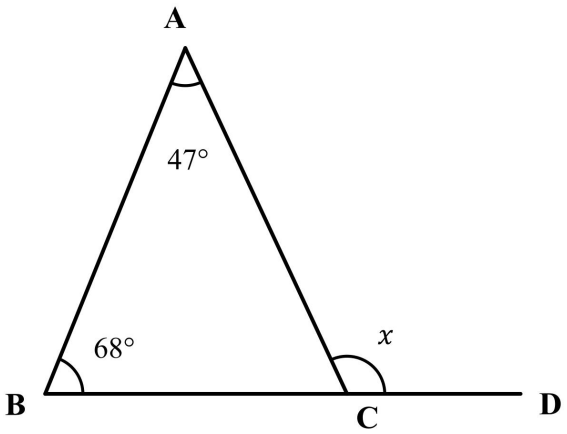
9. Which quadrilateral has exactly ONE pair of opposite sides parallel? (1)

A a trapezium
B a kite
C a parallelogram
D a rhombus

10. Which property is true for EVERY rhombus, but NOT for every parallelogram? (1)

A The diagonals bisect each other at right angles.
B Both pairs of opposite sides are parallel.
C Both pairs of opposite angles are equal.
D The diagonals are equal in length.

11. BC is produced to D. Determine the value of x. (1)



A 65° **B** 21° **C** 115° **D** 133°

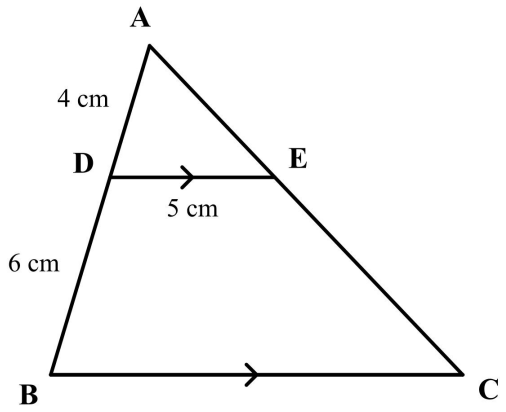
12. Four of the interior angles of a pentagon are 100°, 120°, 95° and 110°. What is the size of its fifth interior angle? (1)

A 295° **B** 108° **C** 115° **D** 106,25°

13. In △ABC and △PQR, AB = PQ, BC = QR and $\hat{B} = \hat{Q}$. Which condition proves △ABC ≡ △PQR? (1)

A SSS **B** AAS **C** RHS **D** SAS

14. In △ABC, DE ∥ BC, AD = 4 cm, DB = 6 cm and DE = 5 cm. Determine BC. (1)



A 12,5 cm **B** 7,5 cm **C** 11 cm **D** 8,33 cm

15. The point A(3 ; −5) is reflected in the x-axis. What are the coordinates of its image A'? (1)

A (3 ; 5) **B** (−3 ; −5) **C** (−3 ; 5) **D** (−5 ; 3)

16. The point E(−3 ; 7) is reflected in the y-axis. What are the coordinates of its image E'? (1)

A (−3 ; −7) **B** (3 ; 7) **C** (3 ; −7) **D** (7 ; −3)

17. The point C(6 ; −1) is reflected in the line $y = x$. What are the coordinates of its image C'? (1)

A (6 ; 1) **B** (−6 ; 1) **C** (1 ; −6) **D** (−1 ; 6)

18. The line segment PQ, with P(2 ; 5) and Q(−1 ; 3), is reflected in the line $y = x$. What are the coordinates of P' and Q'? (1)

A P'(−2 ; 5) and Q'(1 ; 3) **B** P'(5 ; 2) and Q'(3 ; −1)
C P'(2 ; −5) and Q'(−1 ; −3) **D** P'(−5 ; −2) and Q'(−3 ; 1)

19. The point D(−2 ; 5) is translated 4 units to the right and 3 units down. What are the coordinates of its image D'? (1)

A (2 ; 2) **B** (−6 ; 8) **C** (2 ; 8) **D** (−6 ; 2)

20. The point K(3 ; 1) is rotated through 90° clockwise about the origin. What are the coordinates of its image K'? (1)

A (−1 ; 3) **B** (−3 ; −1) **C** (1 ; 3) **D** (1 ; −3)

21. The point P(4 ; −2) is mapped onto P'(2 ; 4). Which transformation maps P onto P'? (1)

A a reflection in the line $y = x$
B a reflection in the y-axis
C a rotation through 180° about the origin
D a rotation through 90° anticlockwise about the origin

22. A figure is enlarged by a scale factor of 3, with the origin as the centre of enlargement. One of its vertices is C(−2 ; 4). What are the coordinates of C'? (1)

A (1 ; 7) **B** (−6 ; 4) **C** (−6 ; 12) **D** (−2 ; 12)

23. A triangle has a perimeter of 24 cm and an area of 24 cm². It is reduced by a scale factor of $\frac{1}{2}$. What are the perimeter and the area of the image? (1)

A 12 cm and 12 cm² **B** 6 cm and 6 cm²
C 12 cm and 6 cm² **D** 48 cm and 96 cm²

24. A rectangle is 6 cm long and 4 cm wide. Its length is doubled, but its breadth stays the same. Which statement is true? (1)

A The area doubles, but the perimeter does not double.
B The area and the perimeter both double.
C The area is multiplied by 4, and the perimeter doubles.
D The area doubles, and the perimeter stays the same.

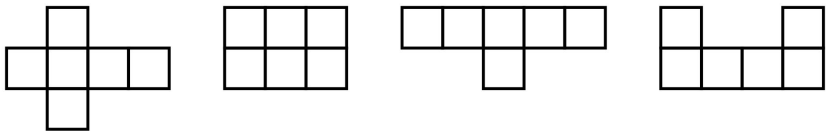
25. A rectangular tabletop has a diagonal of 1,3 m and a length of 1,2 m. What is the area of the tabletop in square centimetres? (1)

A 600 cm² **B** 6 000 cm² **C** 60 000 cm² **D** 15 600 cm²

26. Which statement about spheres and cylinders is TRUE? (1)

A A cylinder has three flat faces.
B A sphere has one curved surface, and no edges or vertices.
C A sphere has one edge.
D A cylinder has two vertices.

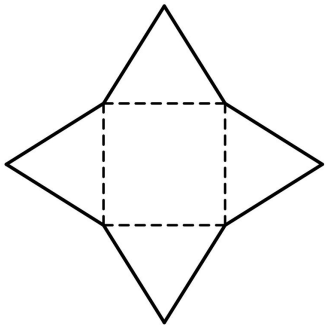
27. Which of the nets P, Q, R and S below can be folded to make a cube? (1)



P **Q** **R** **S**

A net Q **B** net R **C** net S **D** net P

28. The net below is folded along the dashed lines. Which solid does it make? (1)

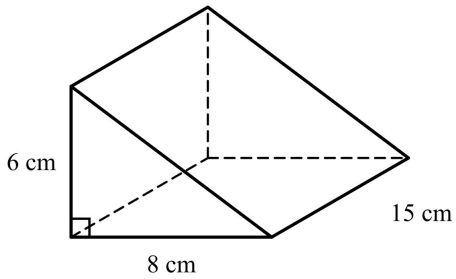


A a square-based pyramid
B a triangular prism
C a cube
D a tetrahedron

29. A regular octahedron is one of the five Platonic solids. How many faces, edges and vertices does it have? (1)

A 6 faces, 12 edges, 8 vertices
B 8 faces, 12 edges, 6 vertices
C 4 faces, 6 edges, 4 vertices
D 8 faces, 12 edges, 8 vertices

30. The triangular prism below has a right-angled triangle as its cross-section. What is its volume? (1)



A 720 cm³ **B** 360 cm³ **C** 450 cm³ **D** 180 cm³

31. A closed box has a square base of 5 cm by 5 cm and a volume of 300 cm³. What is its total surface area? (1)

A 290 cm² **B** 240 cm² **C** 265 cm² **D** 170 cm²

32. Thandi wants to find out how much water the households in her street use. Which question should she ask the households? (1)

A Do you like water?
B Is saving water important?
C How many litres of water does your household use in a month?
D Why do some people waste water?

33. Which method is the most suitable for finding out how many cars pass a school gate between 07:00 and 08:00? (1)

A giving the learners a questionnaire
B interviewing the principal
C observing the gate and counting the cars with a tally table
D reading old newspaper articles

34. A municipality wants to know what the 8 000 households in a town think of a new recycling service. Which sample is the most suitable? (1)

A all 8 000 households in the town
B the 200 households closest to the municipal offices
C the first 200 households that phone the municipality
D 200 households chosen at random from all parts of the town

35. In a survey about recycling, 50 people were asked whether they recycle. 18 of the 30 women and 9 of the 20 men said yes. How many of the men said no? (1)

A 11 **B** 9 **C** 12 **D** 23

36. What is the median of these numbers? 7 ; 3 ; 9 ; 5 ; 3 ; 8 ; 6 (1)

A 6 **B** 5 **C** 3 **D** 5,86

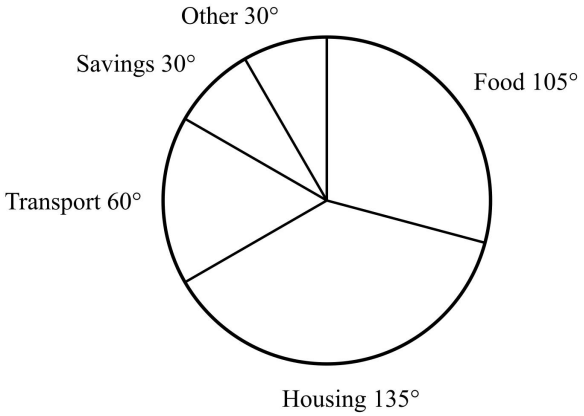
37. The heights, in metres, of seven trees are: 12 ; 14 ; 13 ; 15 ; 13 ; 31 ; 14. Which value is an outlier, and what is the range of the heights? (1)

A outlier 31 m; range 31 m **B** outlier 31 m; range 19 m
C outlier 12 m; range 19 m **D** outlier 12 m; range 3 m

38. To find out how many hours a week Grade 9 learners exercise, a questionnaire was given only to the members of the school's athletics team. Why are the results likely to be biased? (1)

A The sample is too large.
B Time cannot be measured with a questionnaire.
C Only very active learners were asked, so the sample does not represent all Grade 9 learners.
D A questionnaire never gives useful data.

39. The pie chart shows how a family spends its monthly income of R12 000. How much does the family spend on food? (1)



A R1 050 **B** R4 200 **C** R3 500 **D** R3 000

40. Two shops recorded their sales every day for a month. Shop A: mean R2 400 a day, range R300. Shop B: mean R2 400 a day, range R1 500. Which statement is correct? (1)

A The daily sales of Shop A are more consistent than those of Shop B.
B Shop B sold more on average than Shop A.
C Shop A sold more on average than Shop B.
D The sales of the two shops are equally spread out.

41. A coin is tossed and a fair dice is rolled. Use a two-way table to determine the probability of getting tails and a number greater than 4. (1)

A $\frac{1}{3}$ **B** $\frac{1}{6}$ **C** $\frac{1}{12}$ **D** $\frac{1}{2}$

42. Cards numbered from 1 to 20 are shuffled, and one card is drawn at random. What is the probability that its number is a multiple of 3? (1)

A $\frac{1}{3}$ **B** $\frac{7}{20}$ **C** $\frac{3}{20}$ **D** $\frac{3}{10}$

43. A fair spinner has 5 equal sectors numbered 1 to 5. It is spun 200 times. How many times would you expect it to land on an odd number? (1)

A 100 **B** 120 **C** 80 **D** 40

44. The probability that a seed of a certain plant grows is 0,8. A farmer plants 250 of these seeds. How many of them would you expect to grow? (1)

A 50 **B** 80 **C** 208 **D** 200

45. A coin is tossed 50 times and lands on heads 31 times. Which statement is correct? (1)

A The probability of heads is 0,62.

B The relative frequency of heads is 0,62; it differs from the probability of 0,5 because the coin was tossed only 50 times.

C The coin must be unfair, because 31 is not 25.

D If the coin is tossed 50 more times, it will land on heads exactly 25 times.

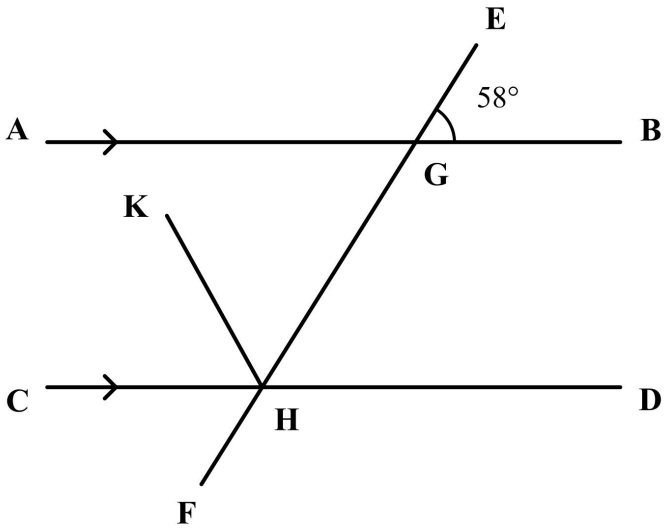
SECTION A TOTAL: [45]

SECTION B

30 MARKS

Show all your calculations. Give a reason for every statement in geometry.

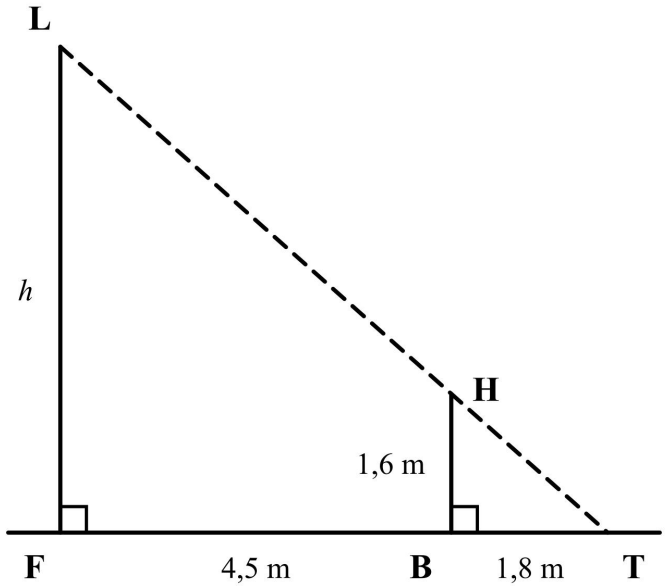
46. In the diagram, AB ∥ CD. The line EF cuts AB at G and CD at H, and ∠EGB = 58°. HK bisects ∠GHC.



46.1 Calculate, with a reason, the size of ∠GHD. (2)

46.2 Calculate, with reasons, the size of ∠KHC. (2)

47. Thabo is 1,6 m tall. He stands 4,5 m from a vertical lamp post, and his shadow is 1,8 m long. The tip of his shadow, T, is also the tip of the lamp post's shadow.



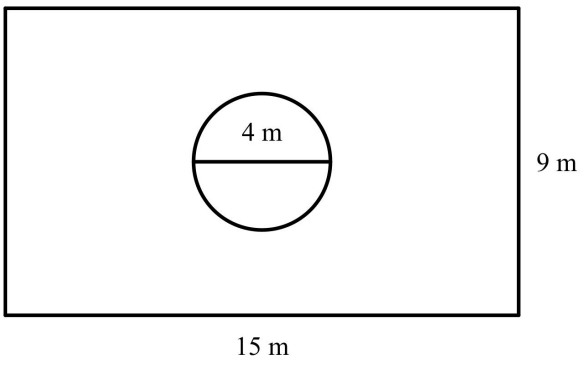
Use similar triangles to calculate h, the height of the lamp post. (5)

48. △ABC with A(2 ; 1), B(3 ; 1) and C(2 ; 3) is drawn on the grid on the ANSWER SHEET.

48.1 On the grid, draw △A'B'C', the image of △ABC after an enlargement by a scale factor of 2 with the origin as the centre of enlargement. Label the vertices. (2)

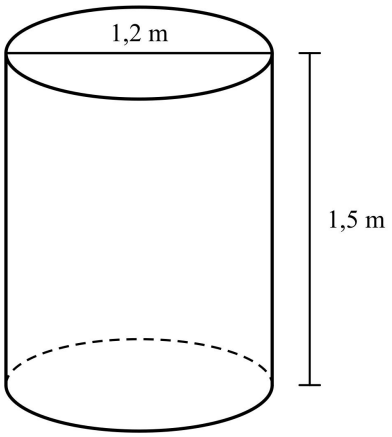
48.2 △ABC is translated 5 units to the left and 4 units down. Write down the coordinates of the image of B. (1)

49. A rectangular lawn is 15 m long and 9 m wide. A circular flower bed with a diameter of 4 m lies in the middle of the lawn.



Lawn grass costs R45 per square metre. Calculate the cost of planting grass on the lawn, but not on the flower bed. (4)

50. A cylindrical water tank has a diameter of 1,2 m and a height of 1,5 m. Water flows into the empty tank at 12 litres per minute.



How long does it take to fill the tank? Give your answer in hours and minutes. (4)

51. The ages of the 30 people at a community meeting are summarised in the table below.

Age (years)	0 – 9	10 – 19	20 – 29	30 – 39	40 – 49
Frequency	3	7	9	6	5

Draw a histogram of the data on the grid on the ANSWER SHEET. (3)

52. The monthly wages of the 7 workers at a small business are:
R4 500 ; R4 800 ; R5 000 ; R5 200 ; R5 500 ; R6 000 ; R35 000

52.1 Calculate the mean and the median of the wages. (2)

52.2 Which of the two describes a typical wage at the business better? Give a reason for your answer. (2)

53. A spinner with three equal sectors, coloured red, white and black, is spun, and then a coin is tossed.

53.1 Draw a tree diagram to show all the possible outcomes. (2)

53.2 Determine the probability of getting white and heads. (1)

SECTION B TOTAL: [30]

TOTAL: 75

ANSWER SHEET

NAME: _____ GRADE: _____

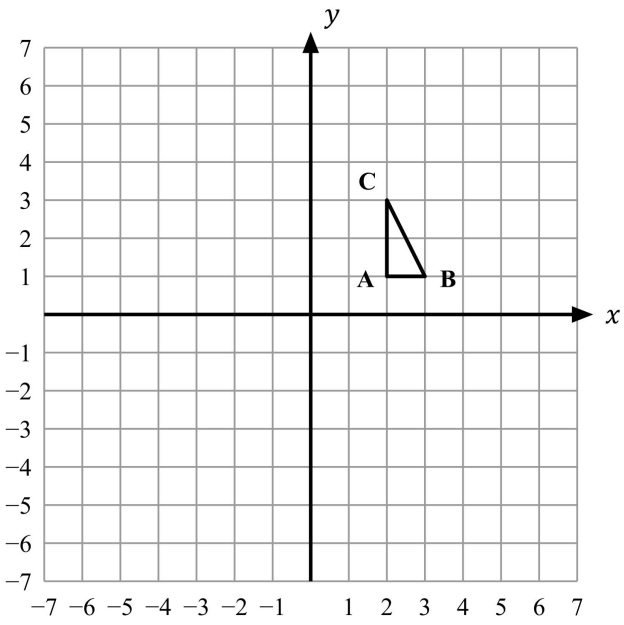
SECTION A — mark your answer with a cross (X).

No.	A	B	C	D
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SECTION B — QUESTION 48



SECTION B — QUESTION 51

