



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL ASSESSMENT  
GENERAL EDUCATION CERTIFICATE (GEC)**

**2025 GRADE 9**

Subject: MATHEMATICS

Paper: 1

Marks: 75

Duration: 2 hours 30 minutes

**Excluding** 15 minutes reading time.

This paper consists of 26 pages, excluding the cover page.



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**Instructions to the learner:**

1. You will receive 15 minutes reading time before you begin answering this paper.
2. Read all the instructions and questions carefully.
3. Answer all the questions in the answer booklet provided.
4. In Section A, do your calculations before choosing the correct option.
5. In Section B, show all the necessary calculations.
6. Non-programmable calculators may be used, unless otherwise stated.
7. Diagrams are not necessarily drawn to scale and all lines are regarded as straight lines, unless stated otherwise.

**The paper starts on the next page.**



**Do not turn the page until you are told to do so.**

## SECTION A

1. Which of the following best describes  $0,8\bar{2}$ ?  
  
A Integer  
B Natural number  
C Rational number  
D Irrational number (1)
  
2. What is the LCM of 18 and 60?  
  
A 6  
B 36  
C 180  
D 1 080 (1)
  
3. What is the HCF of 75, 105 and 1 125?  
  
A 15  
B 45  
C 30  
D 60 (1)
  
4. The ratio of Kaizer Chiefs fans to Orlando Pirates fans at a soccer match is 5:2.  
There are 77 000 fans at the soccer match.  
How many Kaizer Chiefs fans are present?  
  
A 22 000  
B 30 800  
C 33 000  
D 55 000 (1)

5. Car 1, travelling at 140 km/h, leaves Qheberha at 08:00 and drives to East London.

Car 2, travelling at 120 km/h, leaves East London at 08:00 and drives on the same road to Qheberha.

The distance between Qheberha and East London is 286 km.

How far will Car 2 travel to the point where the two cars meet each other?

- A 132 km
- B 143 km
- C 154 km
- D 520 km

(1)

6. R7 750 is invested at 10% per annum compound interest for 24 months. How much interest will the investment earn in 24 months?

- A R1 627,50
- B R9 377,50
- C R9 300,00
- D R1 550,00

(1)

7.  $(-4 \times 7) \times 11$

Which expression represents the associative property?

- A  $(-4 \times 11) + (7 \times 11)$
- B  $(-4 \times 11) \times (7 \times 11)$
- C  $-4 \times (7 \times 11)$
- D  $-4 + (7 \times 11)$

(1)

8. What is the additive inverse of  $3 - 4 - 7$ ?

- A  $-8$
- B  $8$
- C  $-6$
- D  $6$

(1)

9. Simplify:  $12 - (6 - 10) + 18 - (-30) \times 2$

- A  $86$
- B  $66$
- C  $92$
- D  $94$

(1)

10. Evaluate:  $\frac{4(-6) - (10) - 8(12 \div 16)}{-12 + 10}$

- A  $-20$
- B  $-4$
- C  $20$
- D  $4$

(1)

11. Evaluate:  $-2^3 + 1^2 + \sqrt{49 \times 4} \div 7$

- A  $-5$
- B  $-4$
- C  $11$
- D  $10$

(1)

12. Simplify:  $\frac{\sqrt[3]{-64} + 5}{\sqrt{4^2 + 3^2}}$

A  $\frac{1}{7}$

B  $\frac{1}{5}$

C  $\frac{9}{5}$

D  $\frac{9}{7}$

(1)

13. Simplify:  $6n^3 \div 3n^2$

A  $2n$

B  $2n^5$

C  $18n$

D  $18n^5$

(1)

14. Simplify:  $\frac{(ab)^0 \times (a^3b)^{-2}}{(ab)^2}$

A  $\frac{1}{a^8b^4}$

B  $\frac{1}{a^{10}b^6}$

C  $\frac{1}{a^7b^3}$

D  $\frac{1}{a^6b^2}$

(1)

15. Evaluate:  $\frac{3(m^{10}y)^0 \times y^5}{y^6} + \sqrt{25y^2} \times y^{-2} - \frac{(m^{-1}y)^3}{m^{-3}y^4}$

A  $\frac{5}{y}$

B  $\frac{4 + 3y}{y}$

C  $\frac{2 + 5y}{y}$

D  $\frac{7}{y}$

(1)

16. Given:

$\frac{1}{5}; \frac{3}{8}; \frac{9}{13}; \frac{27}{20}; \dots$

What is the next term in the sequence?

A  $\frac{23}{8}$

B  $\frac{81}{27}$

C  $\frac{8}{23}$

D  $\frac{81}{29}$

(1)

17.

|       |   |   |    |  |     |
|-------|---|---|----|--|-----|
| $n$   | 1 | 2 | 3  |  | $a$ |
| $T_n$ | 7 | 3 | -1 |  | -29 |

What is the value of  $a$ ?

A -8

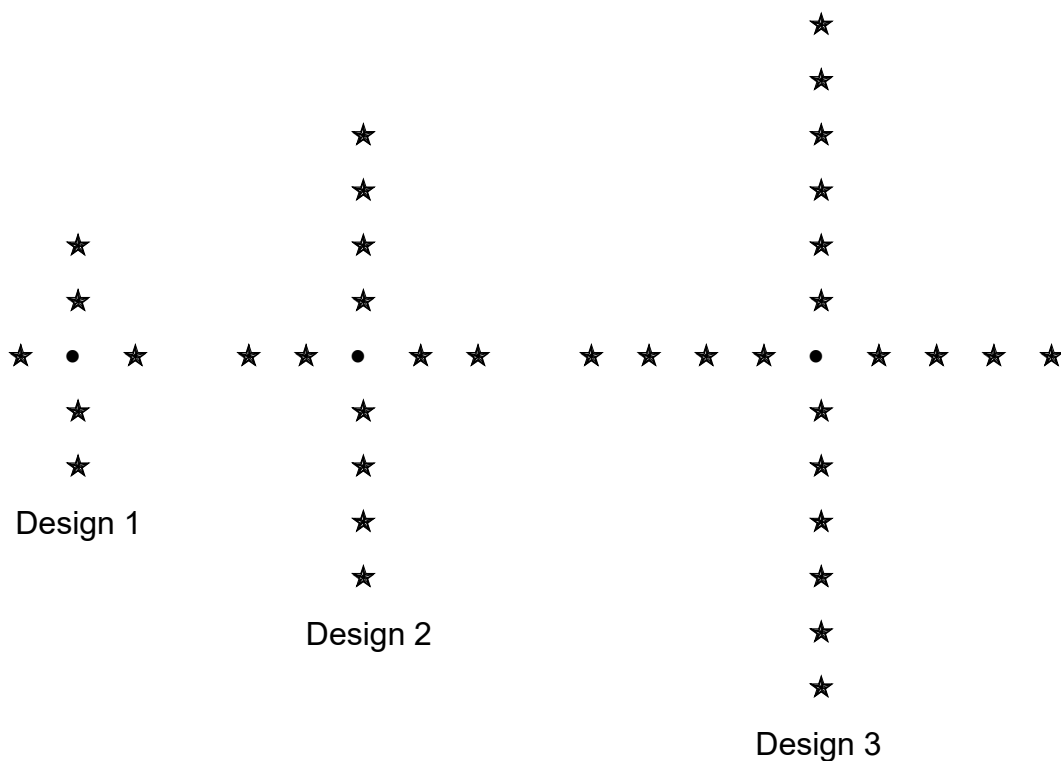
B 8

C -10

D 10

(1)

18.



How many stars (★) will there be in design 4?

- A 30
- B 32
- C 33
- D 36

(1)

19.



Which figure will have 73 hearts?

- A 25
- B 38
- C 143
- D 217

(1)

20. Given:

$$\frac{1}{2}; 2; \frac{9}{2}; 8; \dots$$

Which statement best describes the rule of the pattern?

- A Add a constant difference to the previous term.
- B Multiply a constant ratio by the previous term.
- C Every alternate term has an even numerator.
- D The constant difference increases by 1 each time. (1)

21. Given: 1; 4; 9; 16; ...

Which statement describes the rule?

- A Each term is the cube of its position.
- B Each term is the cube root of its position.
- C Each term is the square of its position.
- D Each term is the square root of its position. (1)

22. Given: 2; 5; 10; 17; ...

What is the rule?

- A  $T_n = -3n + 5$
- B  $T_n = 3n - 1$
- C  $T_n = n^2 + 1$
- D  $T_n = n^3 + 1$  (1)

23.  $5bac^2 + \frac{cab^2}{3} - 4ab^2c + acb^2$

How many like terms does the expression have?

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

24.  $x(x^4) - \frac{x^3}{4} - \sqrt{x^8} + \frac{1}{3}$

Identify the numeric coefficient of  $x^4$ .

A 1

B  $-\frac{1}{4}$

C -1

D  $\frac{1}{3}$

(1)

25. Which of the following is a binomial?

A  $2 \times x^2 + 5y$

B  $2 \times x^2 \div 5y$

C  $2 \times x^2 + 5 - y$

D  $2 - x^2 + 5 - y$

(1)

26. Simplify:  $-a(a - 3) - a^2$

A  $2a^2 - 3a$

B  $3a$

C  $-2a^2 + 3a$

D  $-3a$

(1)

27. Simplify:  $\frac{x^3 + x^3}{\sqrt{16x^4}}$

A  $\frac{1}{2}x^4$

B  $\frac{1}{2}x$

C  $\frac{1}{4}x$

D  $\frac{1}{4}x^4$

(1)

28. Simplify:  $(\sqrt[3]{-27a^6} - 2a^2)^3$

A  $125a^6$

B  $-125a^5$

C  $125a^5$

D  $-125a^6$

(1)

29. Simplify:  $(3n - 5)^2$

A  $9n^2 - 25$

B  $9n^2 - 30n - 25$

C  $9n^2 - 30n + 25$

D  $9n^2 + 25$

(1)

30.  $x + 2y = -2$ .

What is the value of  $(2y + x)^3$ ?

A 8

B -6

C 6

D -8

(1)

31. Factorise:  $4m^2 - 9$

A  $(2m + 3)(2m - 3)$

B  $(2m - 3)(2m - 3)$

C  $(4m - 3)(4m - 3)$

D  $(4m + 3)(4m - 3)$

(1)

32. Factorise:  $x^2 - \frac{3}{4}x + \frac{1}{8}$

A  $\left(x - \frac{1}{2}\right)\left(x - \frac{1}{4}\right)$

B  $\left(x + \frac{1}{2}\right)\left(x - \frac{1}{4}\right)$

C  $\left(x - \frac{1}{2}\right)\left(x + \frac{1}{4}\right)$

D  $\left(x + \frac{1}{2}\right)\left(x + \frac{1}{4}\right)$

(1)

33. Factorise completely:  $4x^2 - 20x - 24$

A  $4(x - 6)(x + 1)$

B  $4(x + 6)(x - 1)$

C  $4(x - 3)(x - 2)$

D  $4(x + 3)(x - 2)$

(1)

34. Factorise completely:  $x^2(x - 3) + 4(3 - x)$

A  $(x - 3)(x^2 + 4)$

B  $(x - 3)(x - 2)(x - 2)$

C  $(3 - x)(x^2 + 4)$

D  $(x - 3)(x + 2)(x - 2)$

(1)

35. Simplify:  $\left(1 - \frac{1}{a}\right) \div \left(a - \frac{1}{a}\right)$

A  $\frac{1}{a+1}$

B  $\frac{1}{a-1}$

C  $a+1$

D  $a-1$

(1)

36.  $\frac{2}{3}x = 12$

Solve for  $x$ .

A 6

B 18

C 8

D 11

(1)

37.  $2x + 4 = x + 16$ .

Mary and Sipho's ages are represented by the equation above.

Let Mary's age be  $x$ .

Which statement best describe the given equation?

A Sipho is twice as old as Mary. In 4 years' time he will be 12 years older than Mary.

B Sipho is half as old as Mary. In 4 years' time he will be 12 years older than Mary.

C Sipho is twice as old as Mary. In 4 years' time he will be 16 years older than Mary.

D Sipho is half as old as Mary. In 4 years' time he will be 16 years older than Mary. (1)

38.  $3x - 2 = 4$

Solve for  $x$ .

A  $x = 2$

B  $x = 3$

C  $x = -2$

D  $x = -3$

(1)

39.  $2^{x-1} = \frac{1}{32}$

Solve for  $x$ .

A  $x = -4$

B  $x = 4$

C  $x = -6$

D  $x = 6$

(1)

40.  $\frac{x}{5} = \frac{1}{9}(y - 32)$

Determine  $y$  if  $x = 10$ .

A 14

B 43

C 13

D 50

(1)

41.

|     |      |                |     |        |                |
|-----|------|----------------|-----|--------|----------------|
| $x$ | $-3$ | $-\frac{1}{4}$ | $0$ | $0,5$  | $2\frac{1}{2}$ |
| $y$ | $9$  | $\frac{1}{16}$ | $0$ | $0,25$ | $P$            |

Determine the value of  $P$ .

A  $\frac{9}{2}$

B  $6\frac{1}{4}$

C  $4\frac{1}{4}$

D  $\frac{10}{4}$

(1)

42. The length of a rectangular wall is  $(x + 3)$  m and the height of the wall is  $(x + 1)$  m. The area of the wall is  $15 \text{ m}^2$ .

What is the height of the wall?

A  $-6 \text{ m}$

B  $2 \text{ m}$

C  $3 \text{ m}$

D  $-5 \text{ m}$

(1)

43.  $a^2 = 36$

Solve for  $a$ .

A  $a = 6$

B  $a = 18$

C  $a = -6$  or  $a = 6$

D  $a = -18$  or  $a = 18$

(1)

44.  $(2x - 4)(x + 1) = 0$

Solve for  $x$ .

A  $x = -2$  or  $x = 1$

B  $x = 2$  or  $x = -1$

C  $x = 4$  or  $x = -1$

D  $x = -4$  or  $x = 1$

(1)

45.  $7x - 6 = x^2$

Solve for  $x$ .

A  $x = 3$  or  $x = 4$

B  $x = -3$  or  $x = -4$

C  $x = 1$  or  $x = 6$

D  $x = -1$  or  $x = -6$

(1)

46.  $(a + 2)^2 - 4(a + 2) + 3 = 0$

Solve for  $a$ .

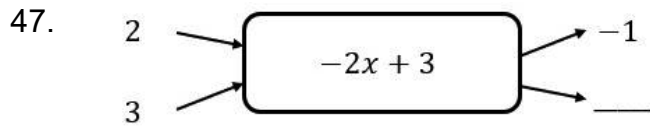
A  $a = -5$  or  $a = -3$

B  $a = -5$  or  $a = 1$

C  $a = 3$  or  $a = 1$

D  $a = 1$  or  $a = -1$

(1)



What is the missing output value?

- A  $-1$
- B  $7$
- C  $-3$
- D  $9$

(1)

48.

|     |   |   |    |
|-----|---|---|----|
| $x$ | 0 | 1 | 2  |
| $y$ | 5 | 8 | 11 |

Which equation represents the relationship shown in the table?

- A  $y = x + 5$
- B  $y = 3x + 5$
- C  $y = x + 11$
- D  $y = 5x + 3$

(1)

49.

|     |       |      |      |     |
|-----|-------|------|------|-----|
| $x$ | $k$   | $-2$ | $0$  | $3$ |
| $y$ | $-13$ | $-7$ | $-1$ | $8$ |

The table is represented by the equation  $y = 3x - 1$ .

What is the value of  $k$ ?

- A  $-3$
- B  $-4$
- C  $-42$
- D  $-40$

(1)

50. Which statement describes the relationship  $y = 3x + 2$ ?

- A Add 2 to 3 times the input value to get the output value.
- B Add 3 to 2 times the input value to get the output value.
- C Multiply the output value by 2 and add 3 to get the output value.
- D Multiply the output value by 3 and add 2 to get the output value. (1)

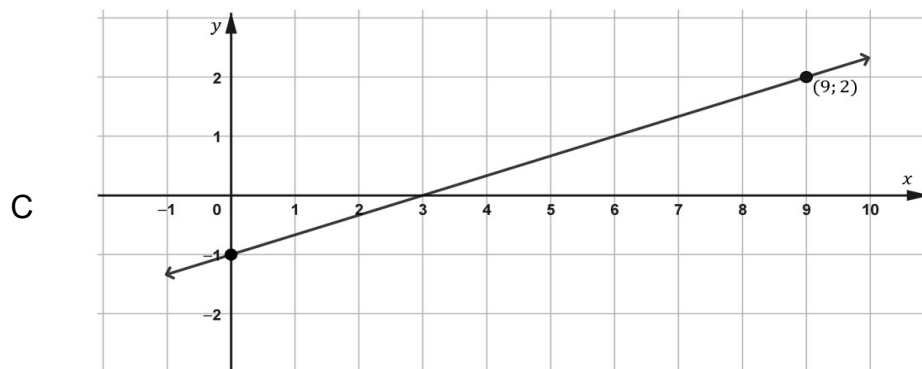
51.

|     |     |               |    |   |    |
|-----|-----|---------------|----|---|----|
| $x$ | -3  | $\frac{1}{5}$ | 0  | 2 | 4  |
| $y$ | -16 | 0             | -1 | 9 | 19 |

Which one of the following best describes the relationship between  $x$  and  $y$  in the above table?

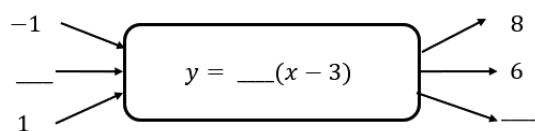
A  $x \rightarrow \boxed{5x - \frac{1}{5}} \rightarrow y$

B  $y = \frac{1}{5}x - 1$

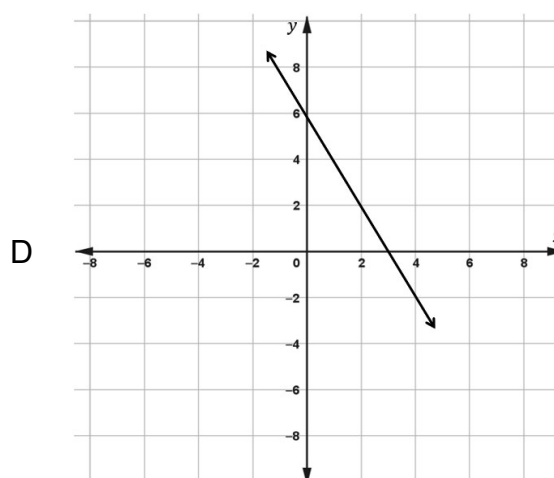
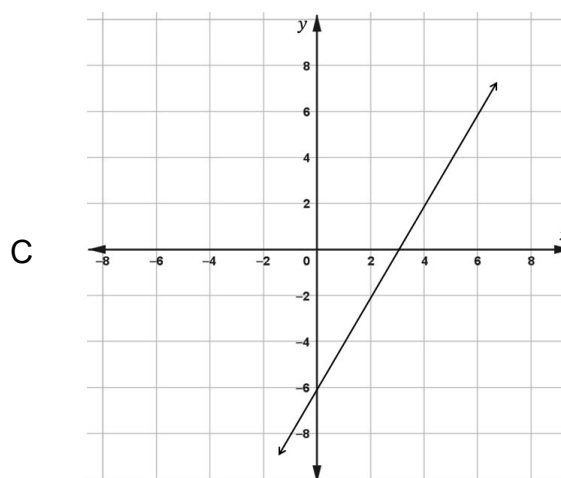
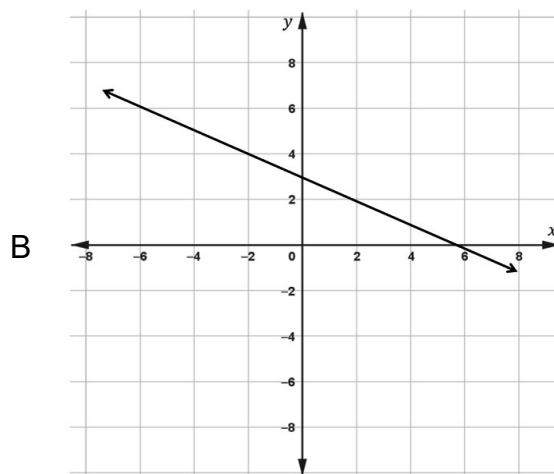
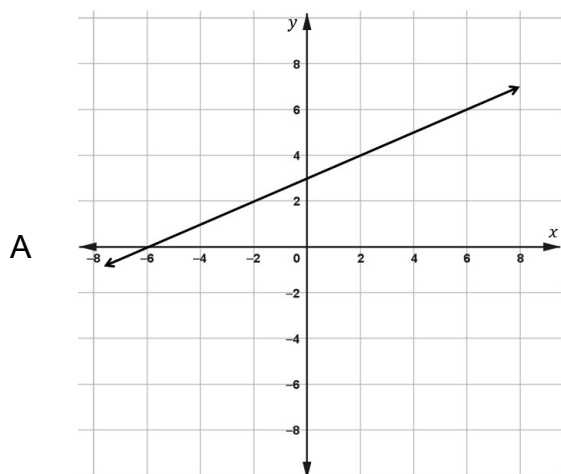


- D Output value is 5 times the input value minus 1. (1)

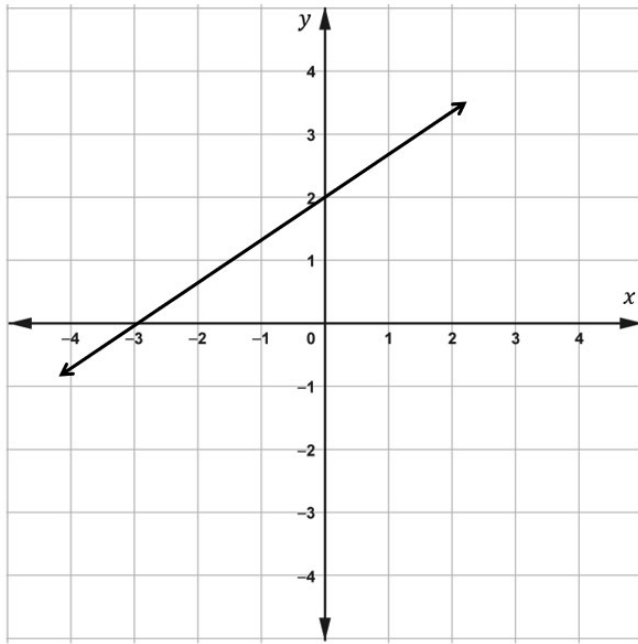
52.



Which graph represents the flow diagram?



53.



What is the y-intercept of the straight line graph?

- A 2
- B -3
- C  $-\frac{2}{3}$
- D  $\frac{2}{3}$

(1)

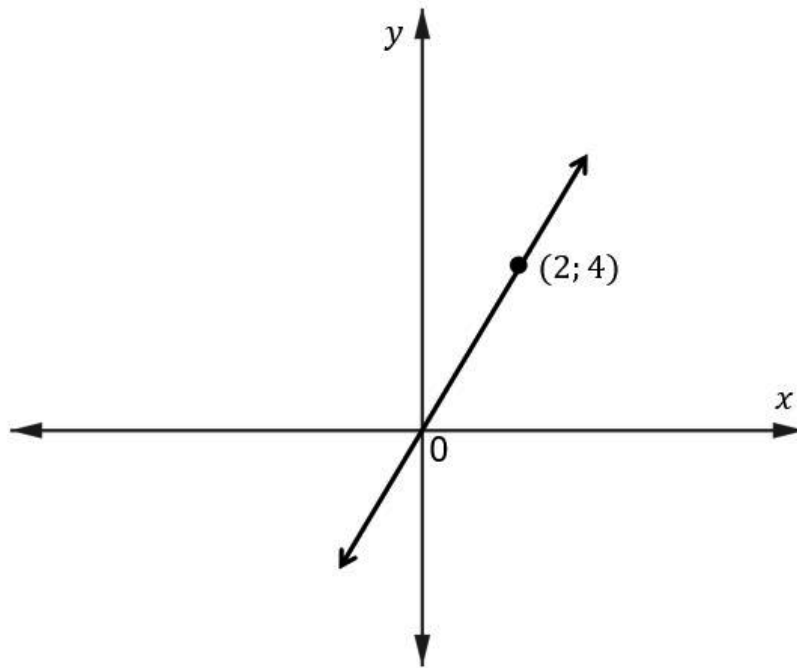
54. Given:  $y - 2x = -2$

What are the coordinates of the x-intercept?

- A  $(-2; 0)$
- B  $(0; -2)$
- C  $(1; 0)$
- D  $(0; 1)$

(1)

55.



What is the gradient of the line represented by the graph?

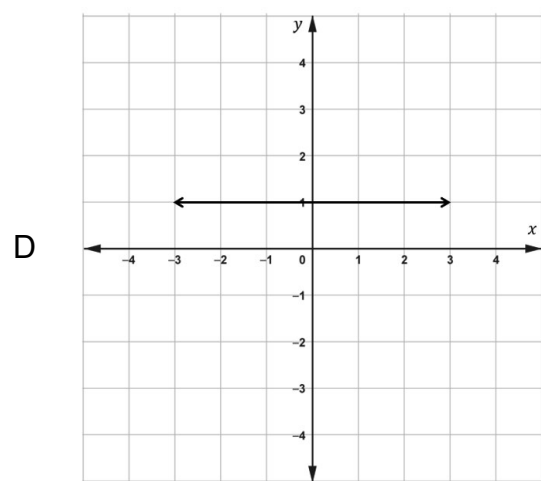
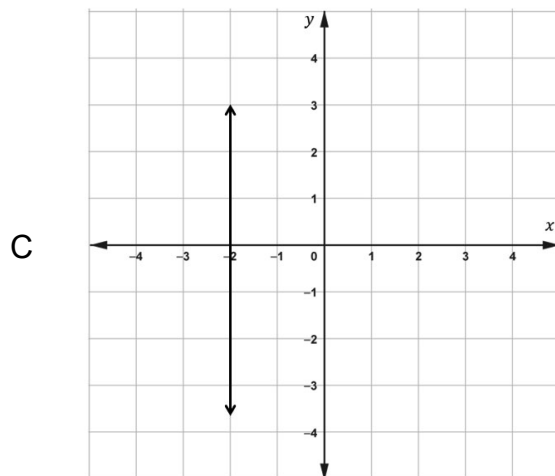
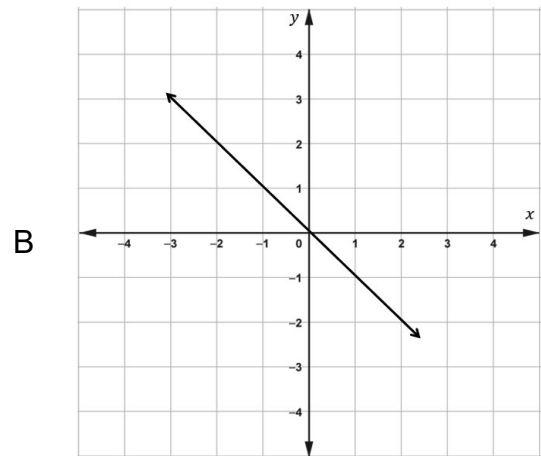
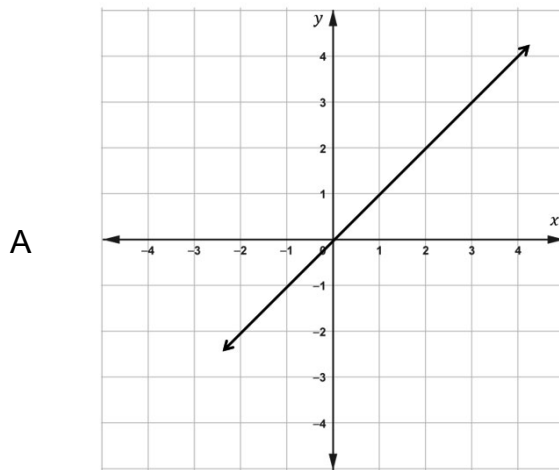
- A  $-\frac{1}{2}$
- B  $-2$
- C  $\frac{1}{2}$
- D  $2$

(1)

56.

|     |    |    |   |    |
|-----|----|----|---|----|
| $x$ | -2 | -1 | 0 | 1  |
| $y$ | 2  | 1  | 0 | -1 |

Which graph represents the table?

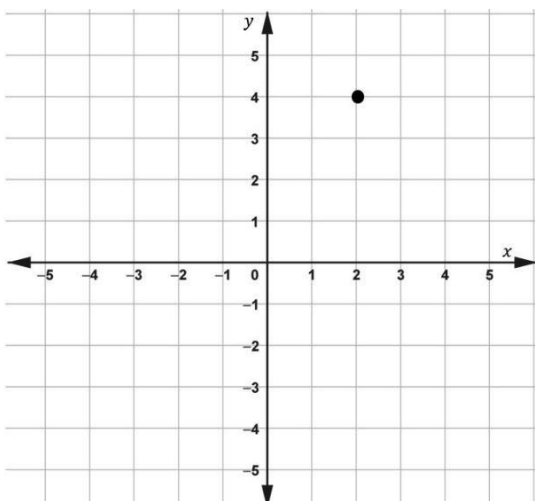


57.

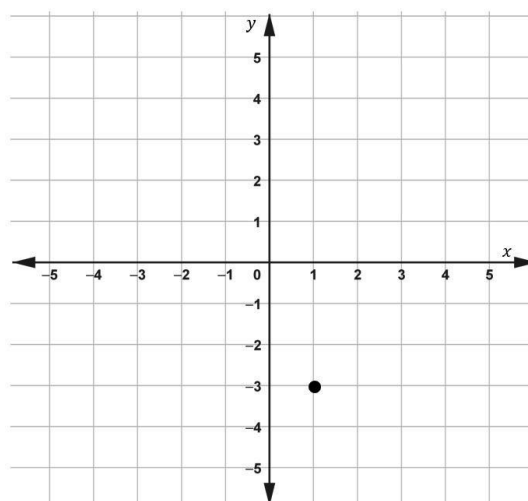
|     |    |    |   |   |
|-----|----|----|---|---|
| $x$ | -1 | 1  | 2 | 3 |
| $y$ | -5 | -3 | 4 | 5 |

Which point on the Cartesian plane is represented in the table?

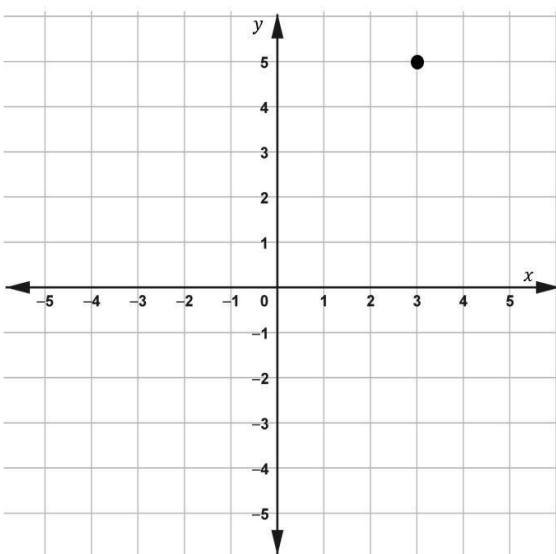
A



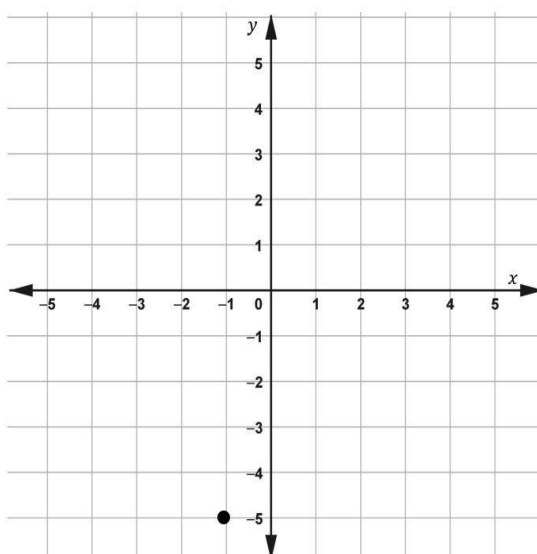
B



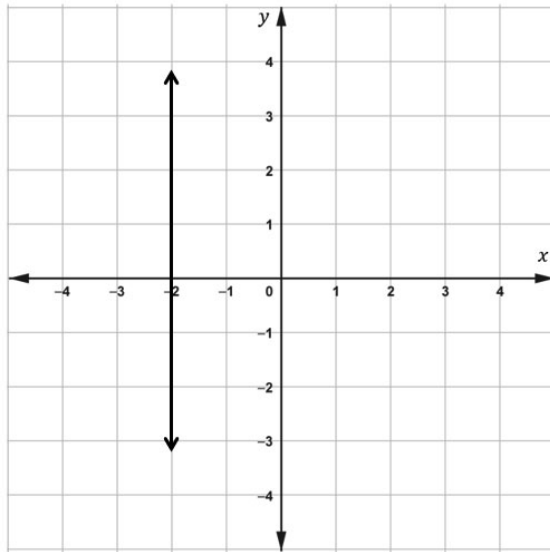
C



D



58.



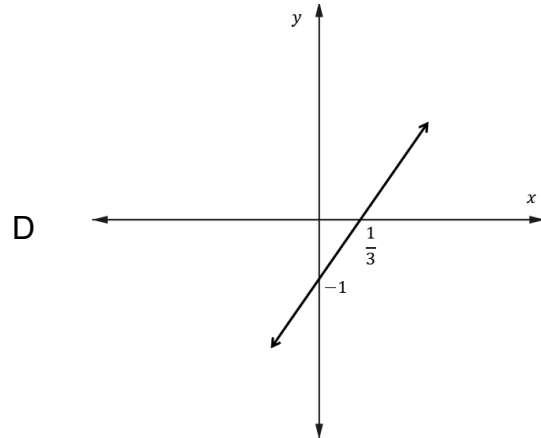
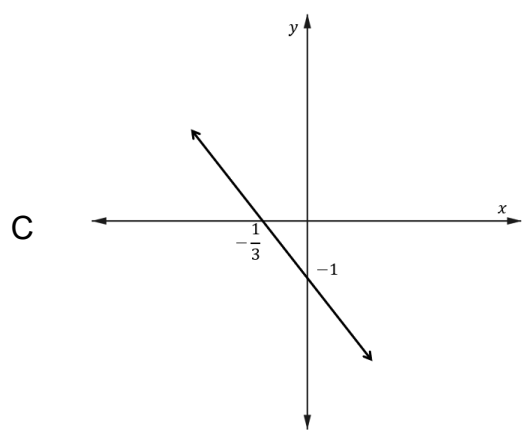
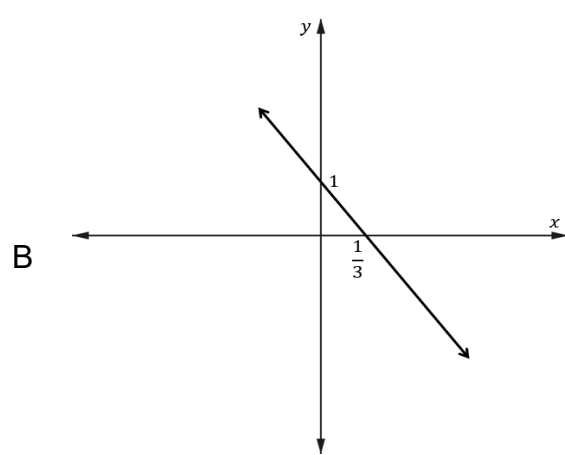
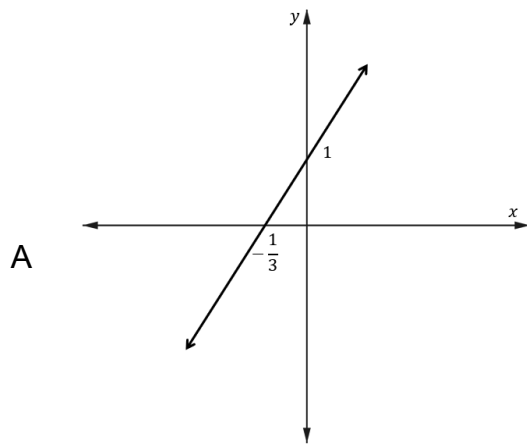
Which equation represents the graph?

- A  $y = -2x$
- B  $x = -2$
- C  $x = -2y$
- D  $y = -2$

(1)

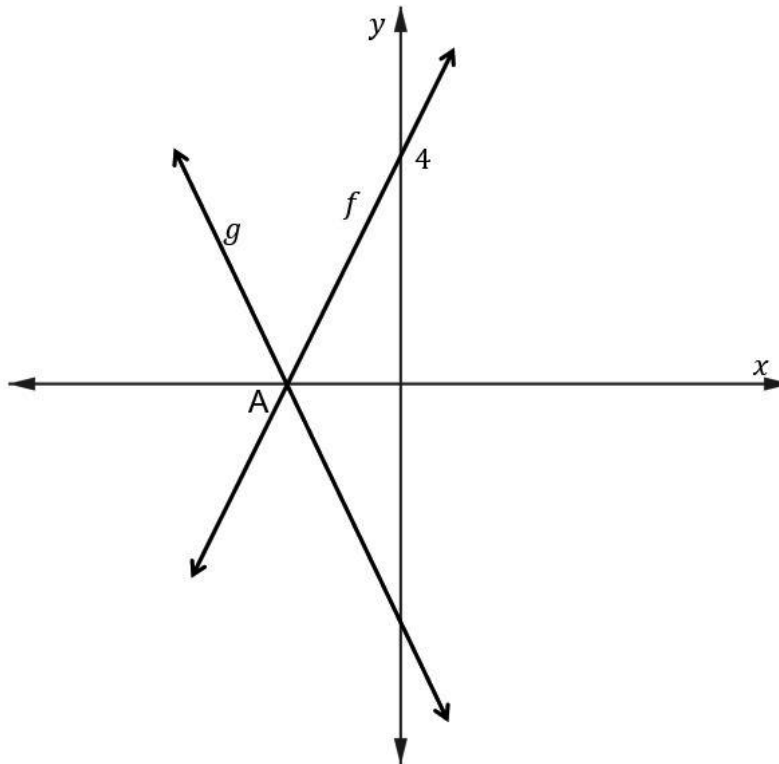
59.  $y = 3x - 1$

Which graph represents the equation?



(1)

60.



The equation of  $g$  is  $y = -2x - 4$ .

What is the equation of  $f$ ?

A  $y = -2x + 4$

B  $y = 2x + 4$

C  $y = -2x - 2$

D  $y = 2x - 2$

(1)

**SECTION A TOTAL [60]**

## SECTION B

61. Simplify: (3)

$$\left( \frac{x^{-3}y}{-2x^{-2}} \right)^{-3}$$

62. Simplify: (3)

$$\frac{2m^2 - 2m}{m} \times \frac{1}{m^2 - 2m + 1}$$

63. The product of two consecutive odd numbers is equal to the difference between  $3x^2$  and 12.  
Determine the smaller number. (4)

64. Given:  $2y + 6x = 4$

- 64.1 Determine the  $x$ -intercept and  $y$ -intercept. (2)

- 64.2 Hence, draw the graph on the Cartesian plane provided. (3)

**SECTION B TOTAL [15]**  
**TOTAL [75]**

End of paper.









