Practice MCQ 1

Instructions

Please answer **all 60 multiple-choice questions** in this quiz.

When you are finished, click **Submit**. Your results will appear immediately, along with the **correct answers** so you can review your work and learn from any mistakes.

Good luck!

* Indicates required question

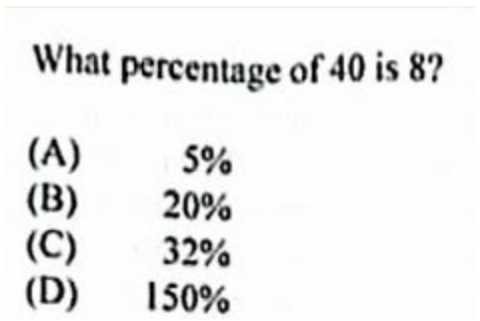
Name of student *

Your answer

Name of School *

Your answer

1. * 1 point



- A
- B
- C
- D

2. * 1 point

The value of the digit 2 in the number 748.621 is

(A) $\frac{2}{10^2}$

(B) $\frac{2}{10^3}$

(C) 2×10^{-1}

(D) $2\,000 \times 10^{-3}$

- A
- B
- C
- D

3. * 1 point

$\sqrt{17^2 - 15^2}$ is equal to

(A) 1
(B) 2
(C) 8
(D) 16

- A
- B
- C
- D

4. * 1 point

In a school, the ratio of the number of pupils to the number of teachers is 20:1. If the number of pupils is 840, how many teachers are there?

(A) 40
(B) 42
(C) 820
(D) 840

- A
- B
- C
- D

5. * 1 point

A bag of apples can be shared equally among either 6, 10 or 15 children. The MINIMUM number of apples that is likely to be in the bag is

(A) 30
(B) 31
(C) 60
(D) 90

- A
- B
- C
- D

6. * 1 point

99×101 has the same value as

(A) $(99 \times 100) + 1$
(B) $(99 \times 100)(99 \times 1)$
(C) $(99 \times 100) - (99 \times 1)$
(D) $(99 \times 100) + (99 \times 1)$

- A
- B
- C
- D

7. * 1 point

Which of the following sets is defined by

$\{x \in Z : -2 \leq x \leq 4\}$?

(A) $\{1, 2, 3, 4\}$
(B) $\{0, 1, 2, 3, 4\}$
(C) $\{-1, 0, 1, 2, 3\}$
(D) $\{-2, -1, 0, 1, 2, 3, 4\}$

- A
- B
- C
- D

8. *

1 point

What is the Highest Common Factor of the set of numbers {54, 72, 90}?

(A) 9
(B) 18
(C) 90
(D) 1080

- A
- B
- C
- D

9. *

1 point

The LARGEST prime number that is less than 100 is

(A) 91
(B) 93
(C) 97
(D) 99

- A
- B
- C
- D

10. *

1 point

What is the LEAST number of plums that can be shared equally among either 6, 9 or 12 children?

(A) 27
(B) 36
(C) 54
(D) 72

- A
- B
- C
- D

11. * 1 point

If $P = \{2,3,5,7\}$, $Q = \{2,3,6\}$ and $S = \{2,4,5\}$ then $P \cap Q \cap S =$

(A) $\{2\}$
(B) $\{2,3\}$
(C) $\{4, 5, 6, 7\}$
(D) $\{2, 3, 4, 5, 6, 7\}$

- A
- B
- C
- D

12. * 1 point

The set of positive integers that are divisible by 7 is an example of

(A) an improper set
(B) an infinite set
(C) an empty set
(D) a finite set

- A
- B
- C
- D

13. * 1 point

Item 13 refer to the following diagram which shows part of a shopping bill.

Item	Unit Cost Price	Total Cost Price
4 kg flour	*P*	$12.40
2 kg sugar	$3.60	$ 7.20
8 kg rice	*Q*	*T*
Subtotal		$40.40
VAT (8%)		xxxxxx
Total		xxxxxx

The correct values of *P*, *Q* and *T* are

	P	*Q*	*T*
(A)	$0.99	$1.66	$19.60
(B)	$3.10	$6.70	$20.80
(C)	$4.05	$5.50	$19.60
(D)	$3.10	$2.60	$20.80

- A
- B
- C
- D

14. * 1 point

Item 14 refer to the following diagram which shows part of a shopping bill.

Item	Unit Cost Price	Total Cost Price
4 kg flour	*P*	$12.40
2 kg sugar	$3.60	$ 7.20
8 kg rice	*Q*	*T*
Subtotal		$40.40
VAT (8%)		xxxxxx
Total		xxxxxx

According to the bill, the amount paid for VAT is

(A) $ 3.10
(B) $ 3.23
(C) $37.17
(D) $43.63

- A
- B
- C
- D

15. * 1 point

At a bank, EC$2.60 is equivalent to US$1.00. For every US$1.00 exchanged, EC$0.10 is deducted as an exchange tax. How many EC dollars will Leon receive if he exchanges US$1 000.00?

(A) $ 900.90
(B) $2 360.34
(C) $2 500.00
(D) $2 600.00

- A
- B
- C
- D

16. * 1 point

A calculator which is marked at $120 is sold for cash at a 30% discount. How much change would Susan receive if she pays for the calculator with a $100 bill?

(A) $16
(B) $20
(C) $28
(D) $36

- A
- B
- C
- D

17. * 1 point

By selling a bag for $1 140, Vishal incurred a loss of 5%. At what price should he have sold the bag to gain a profit of 5%?

(A) $1 197.00
(B) $1 254.00
(C) $1 256.85
(D) $1 260.00

- A
- B
- C
- D

18. * 1 point

The cost of a machine is estimated to be decreasing at the rate of 10% every year. If it currently costs $6 000, what will be the estimated value of the machine after 2 years?

(A) $1 140
(B) $4 800
(C) $4 860
(D) $5 400

- A
- B
- C
- D

19. * 1 point

A man pays 60 cents for every 200 m³ of gas used, plus a fixed charge. If he pays $178.75 when he uses 55 000 m³ of gas, how much is the fixed charge?

(A) $ 13.75
(B) $ 14.35
(C) $151.25
(D) $165.00

- A
- B
- C
- D

20. * 1 point

The compound interest on $12 000 for 2 years at 10% per annum, compounded annually, is

(A) $ 1 320
(B) $ 2 520
(C) $13 200
(D) $14 520

- A
- B
- C
- D

21. * 1 point

The product of a number p and its reciprocal may be written as

(A) $p^2 \times (-p)$

(B) $p \times (-p)$

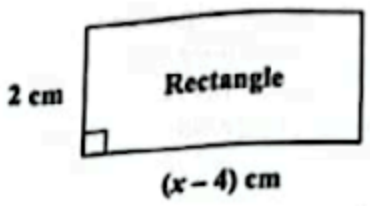
(C) $p^2 \times \frac{1}{p}$

D) $p \times \frac{1}{p}$

- A
- B
- C
- D

22. * 1 point

Item 22 refers to the following diagram of a rectangle.



The area of the rectangle, in cm^2, is x^2. The equation that may be used to find the value of x is

(A) $x^2 = 2(x-4)$
(B) $x^2 = (x-2)(x-4)$
(C) $x^2 = (x-4)(x+2)$
(D) $x^2 = 2(x-4)(x-2)$

- A
- B
- C
- D

23. * 1 point

Althea, Bob and Chris collect shells. Althea has p shells, Bob has TWICE as many shells as Althea and Chris has 4 more than the **total** number of shells that both Althea and Bob collected. Altogether, the total number of shells they have is

(A) $6p$
(B) $3p + 4$
(C) $6(p + 2)$
(D) $2(3p + 2)$

- A
- B
- C
- D

24. * 1 point

If $3 + \frac{2}{x} = 1$, then the value of x is

(A) -1

(B) $\frac{1}{5}$

(C) $\frac{1}{2}$

(D) 5

- A
- B
- C
- D

25. * 1 point

The value of $5^{n+1} \times 5^{n+2}$ when $n = -1$ is

(A) 1
(B) 5
(C) 10
(D) 25

- A
- B
- C
- D

26. * 1 point

If 40 students will take 20 days to paint a wall, how many days will it take to paint the wall if 10 more students are added, working at the same rate?

(A) 12
(B) 15
(C) 16
(D) 18

- A
- B
- C
- D

27. * 1 point

If $P = \begin{bmatrix} 2 & 5 \\ -1 & 3 \end{bmatrix}$, then the value of $|P|$ is

(A) 0
(B) 1
(C) 4
(D) 11

- A
- B
- C
- D

28. * 1 point

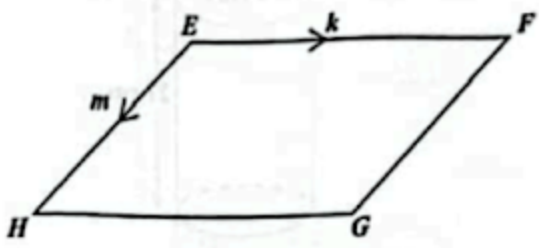
If $A = \begin{bmatrix} 1 & 2 & 5 & 4 \\ 6 & 1 & 3 & 7 \\ -2 & 3 & 2 & 9 \end{bmatrix}$, then the order of A is

(A) 2×3
(B) 3×2
(C) 3×4
(D) 4×3

- A
- B
- C
- D

29. * 1 point

Item 29 refers to the following diagram of a parallelogram, in which EF is parallel to HG, EH is parallel to FG, $\overrightarrow{EF} = k$ and $\overrightarrow{EH} = m$.



$\overrightarrow{EG}$ expressed in terms of k and m is

(A) $-m - k$
(B) $m - k$
(C) $k - m$
(D) $k + m$

- A
- B
- C
- D

30. * 1 point

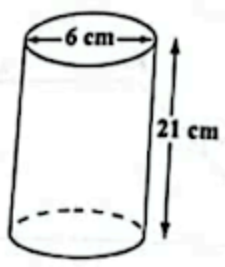
If $5\begin{bmatrix} x \\ y \end{bmatrix} = 4\begin{bmatrix} 10 \\ 20 \end{bmatrix}$, then the values of x and y are

(A) $x = 4,\ y = 5$
(B) $x = 8,\ y = 16$
(C) $x = 2.5,\ y = 4$
(D) $x = 10,\ y = 20$

- A
- B
- C
- D

31. * 1 point

Item 31 refers to the following diagram which shows a cylinder whose diameter is 6 cm and height 21 cm.



Given that $\pi = \frac{22}{7}$, then the volume of the cylinder, in cm^3, is

(A) 120
(B) 396
(C) 594
(D) 2 376

- A
- B
- C
- D

32. * 1 point

In a rectangular garden plot, 15 m long and 12 m wide, an area of 80 m^2 is used for a vegetable garden. What area of the plot is NOT used for vegetable gardening?

(A) 26 m^2
(B) 100 m^2
(C) 134 m^2
(D) 260 m^2

- A
- B
- C
- D

33. * 1 point

How long will a speedboat take to travel between two harbours which are 1 080 km apart, if it travels at an average speed of 120 kmh^{-1}?

(A) 8 hours
(B) 9 hours
(C) 12 hours
(D) 15 hours

- A
- B
- C
- D

34. * 1 point

The lengths of the sides of a triangle are x, $2x$ and $2x$ centimetres. If the perimeter is 20 centimetres, what is the value of x?

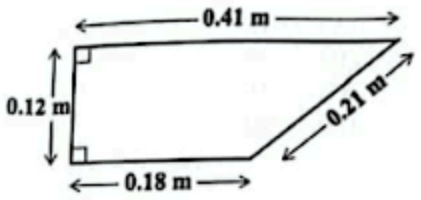
(A) 4
(B) 5
(C) 8
(D) 10

- A
- B
- C
- D

35. *

1 point

Item 35 refers to the following diagram of a trapezium.



The perimeter of the trapezium, in millimetres, is

(A) 0.092
(B) 9.2
(C) 92
(D) 920

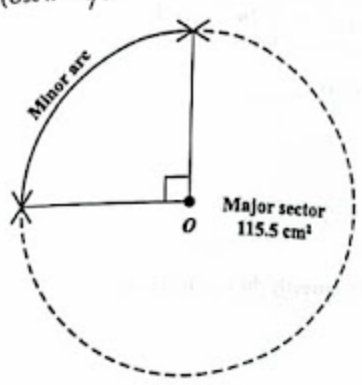
- A
- B
- C
- D

36. *

1 point

Item 36 refers to the following diagram which shows a circle, centred at O. The major sector and minor arc are indicated.

(Use $\pi = \frac{22}{7}$).



If the area of the major sector is 115.5 cm², then the diameter of the circle, in cm, is

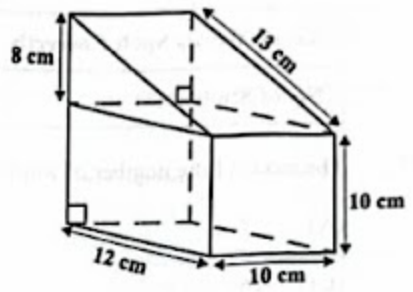
(A) 5.5
(B) 7.0
(C) 14.0
(D) 28.0

- A
- B
- C
- D

37. *

1 point

Item 37 refers to the following diagram which shows a compound solid.



The surface area of the compound solid, in cm^2, is

(A) 746
(B) 866
(C) 980
(D) 1 100

- A
- B
- C
- D

38.

1 point

The distance around a lake is 8 km. On a map, this distance around the lake is represented by a length of 4 cm. The scale on the map is

(A) 1 : 40
(B) 1 : 2 000
(C) 1 : 100 000
(D) 1 : 200 000

- A
- B
- C
- D

39. * 1 point

Item 39 refer to the following table which shows the number of words that a group of 60 students got correct in a spelling test that consisted of 10 words.

No. of Words Spelt Correctly	6	7	8	9	10
No. of Students	3	18	7	16	16

The mode of the number of words spelt correctly is

(A) 7
(B) 8
(C) 16
(D) 18

- A
- B
- C
- D

40 * 1 point

Item 40 refer to the following table which shows the number of words that a group of 60 students got correct in a spelling test that consisted of 10 words.

No. of Words Spelt Correctly	6	7	8	9	10
No. of Students	3	18	7	16	16

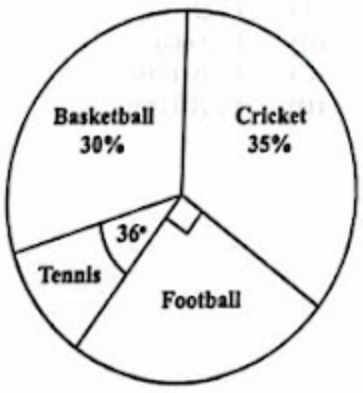
The median number of words the students spelt correctly during the test is

(A) 8
(B) 9
(C) 16
(D) 18

- A
- B
- C
- D

41. * 1 point

Item 41 refers to the following pie chart which shows the popular games played by a group of students.



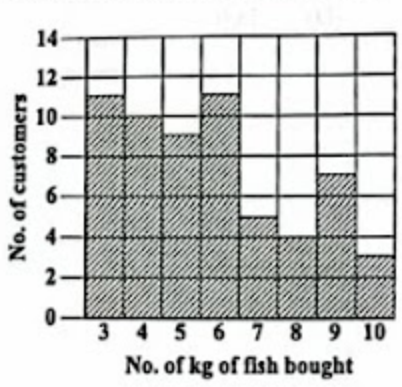
If 180 students play football, how many students are in the group?

(A) 300
(B) 360
(C) 720
(D) 900

- A
- B
- C
- D

42. * 1 point

Item 42 refers to the following chart which shows the amount of fish bought, in kg, by the first 60 customers at a fish market.



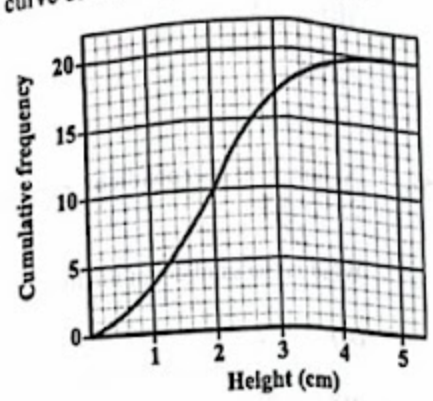
How many customers bought at LEAST 6 kg of fish?

(A) 18
(B) 19
(C) 30
(D) 34

- A
- B
- C
- D

43. * 1 point

Item 43 refers to the following diagram which shows the cumulative frequency curve of the heights of 20 seedlings.



The semi-interquartile range of the set of measurements is

(A) 0.65 cm
(B) 1.30 cm
(C) 2.00 cm
(D) 2.60 cm

- A
- B
- C
- D

44. * 1 point

Six hundred students sit an examination. The probability of a randomly selected student failing the examination is $\frac{1}{5}$.

How many students are expected to pass the examination?

(A) 100
(B) 120
(C) 480
(D) 500

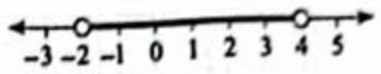
- A
- B
- C
- D

45. *

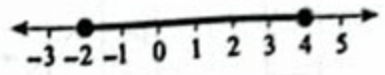
1 point

Which of the following line graphs represents $\{x: -2 < x \leq 4\}$?

(A)

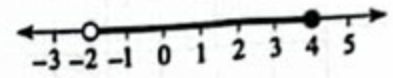


(B)



(C)

(D)



- A
- B
- C
- D

46. *

1 point

Which of the following represents the equation of a straight line?

(A) $y = \frac{4}{x}$

(B) $y = 2x + 3$

(C) $y = x^2 - 4$

(D) $y = x^2 + 2x - 5$

- A
- B
- C
- D

47. *

1 point

What is the gradient of the straight line $2y = -3x - 8$?

(A) 2

(B) 3

(C) -3

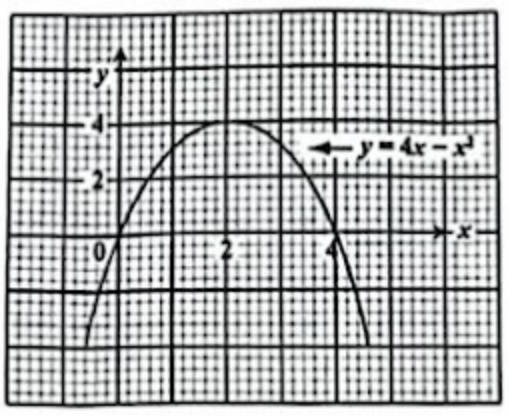
(D) $-\frac{3}{2}$

- A
- B
- C
- D

48. *

1 point

Item 48 refer to the following graph of a quadratic function.



The maximum point of $y = 4x - x^2$ is

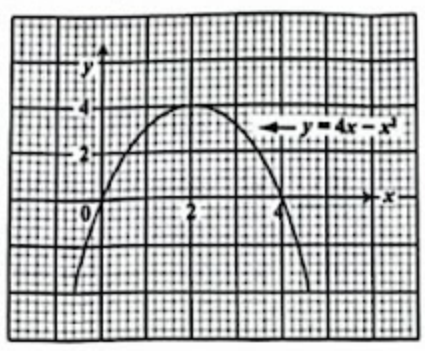
(A) (0, 0)
(B) (0, 4)
(C) (4, 2)
(D) (2, 4)

- A
- B
- C
- D

49. *

1 point

Item 49 refer to the following graph of a quadratic function.



According to the graph, the solution of the equations $y = 4x - x^2$ and $y = 0$ are

(A) $x = 0$ when $y = 0$ and $x = 4$ when $y = 0$

(B) $x = 0$ when $y = 0$ and $x = 2$ when $y = 4$

(C) $x = 2$ when $y = 4$ and $x = 4$ when $y = 0$

(D) $x = 0$ when $y = 0$ and $x = -4$ when $y = -32$

- A
- B
- C
- D

50. * 1 point

If $h(x) = 4x^3 - 6$, then $h\left(-\frac{1}{2}\right) =$

(A) −7
(B) −5
(C) 2
(D) 5

- A
- B
- C
- D

51. * 1 point

A line L is perpendicular to the line $2x - y - 8 = 0$.

What is the gradient of the line L?

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

- A
- B
- C
- D

52. * 1 point

Which of the following sets is represented by the function $f: x \to x^2 + 3$ where $x \in \{0, 1, 2, 3\}$?

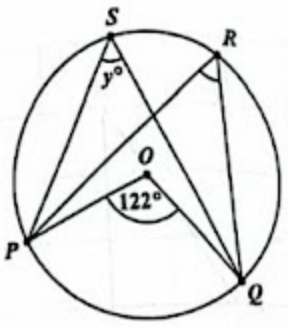
(A) {(0, 3), (1, 1), (2, 4), (3, 9)}
(B) {(0, 3), (1, 4), (2, 5), (3, 6)}
(C) {(0, 3), (1, 5), (2, 7), (3, 9)}
(D) {(0, 3), (1, 4), (2, 7), (3, 12)}

- A
- B
- C
- D

53. *

1 point

Item 53 refers to the following diagram of a circle with its centre at O. Angle $POQ = 122°$.



The value of $y°$ is

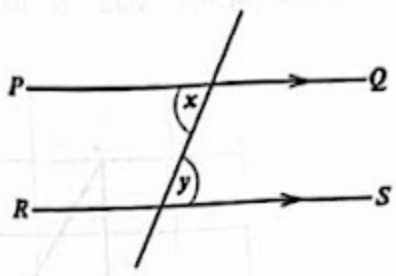
(A) 29°
(B) 58°
(C) 61°
(D) 84°

- A
- B
- C
- D

54. *

1 point

Item 54 refers to the following diagram.



In the diagram, PQ and RS are parallel. Which of the following BEST describes the relation between x and y?

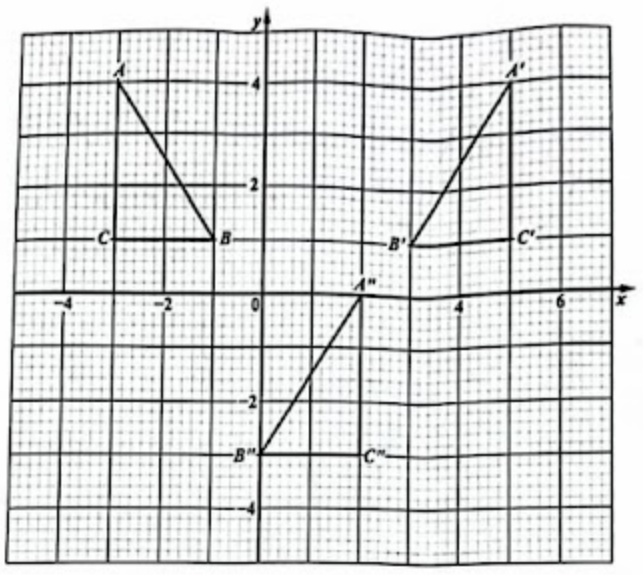
(A) $x = y$
(B) $x < y$
(C) $x + y = 90°$
(D) $x + y = 180°$

- A
- B
- C
- D

55. *

1 point

Item 55 refers to the following diagram which shows Triangle ABC and its images $A'B'C'$ and $A''B''C''$ after Triangle ABC undergoes a composite/double transformation.



What sequence of transformations will map triangle ABC onto its image, triangle $A''B''C''$?

(A) A reflection in the line $x = 1$, followed by a translation of $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$

(B) A translation of $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$ followed by a reflection in the x-axis

(C) A translation of 4 units to the left, followed by a clockwise rotation of 90° about the origin

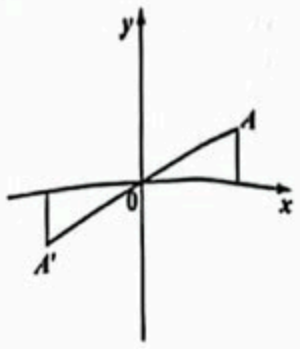
(D) A counterclockwise rotation of 90° about the origin followed by a translation of 4 units downwards

- A
- B
- C
- D

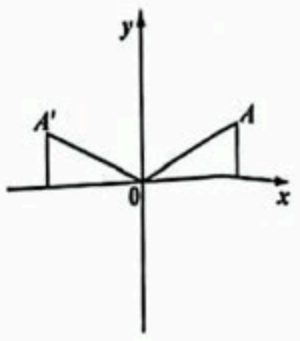
56. * 1 point

In each of the following diagrams, A' is the image of A. Which of the diagrams shows a reflection in the x-axis?

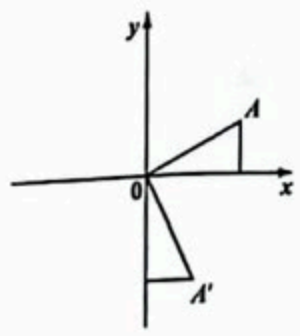
(A)



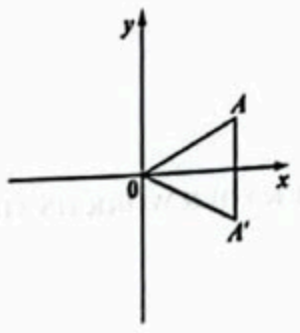
(B)



(C)



(D)



- A
- B
- C
- D

57. * 1 point

In Triangle ABC, Angle $A = x°$ and Angle $B = 2x°$. What is the size of Angle C?

(A) $(180 - 3x)°$

(B) $60°$

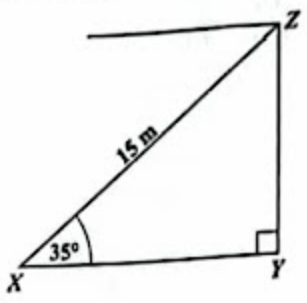
(C) $30°$

(D) $\left[\frac{180}{3x}\right]°$

- A
- B
- C
- D

58. * 1 point

Item 58 refers to the following diagram which shows the angle of elevation of a point, Z, from X.



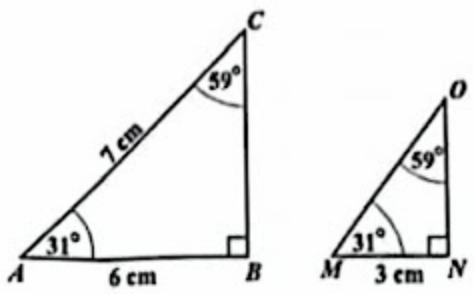
The angle of elevation of the point Z from X is 35°. If X is 15 metres from Z, then the height YZ, in metres, is

(A) 15 cos 35°
(B) 15 sin 55°
(C) 15 sin 35°
(D) 15 tan 55°

- A
- B
- C
- D

59. * 1 point

Item 59 refers to the following pair of similar triangles.



The length of MO, in centimetres, is

(A) 3.0
(B) 3.5
(C) 4.6
(D) 6.0

- A
- B
- C
- D

60. * 1 point

Under the translation $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$, the image of $(-5, 3)$ is

(A) $(0, -3)$
(B) $(1, -2)$
(C) $(-7, 6)$
(D) $(3, 6)$

- A
- B
- C
- D

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