

1. What percentage of 30 is 6?

- (A) 5%
- (B) 18%
- (C) 20%
- (D) 150%

2. The exact value of $6 \div (0.003)$ is

- (A) .200
- (B) 2 000
- (C) 20 000
- (D) 200 000

3. $\sqrt{17^2 - 15^2}$

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

4. 0.386×0.06

- (A) 0.02316
- (B) 0.2316
- (C) 2.316
- (D) 23.16

5. Ann and Betty shared a sum of money in the ratio 2:3 respectively. Ann received \$120. What was Betty's share?

- (A) \$ 72
- (B) \$ 80
- (C) \$180
- (D) \$300

6. If 60% of a number is 90, what is the number?

- (A) 30
- (B) 54
- (C) 150
- (D) 180

7. The number 301 can be written as

- (A) $3 \times 10^2 + 1$
- (B) $3 \times 10^3 + 1$
- (C) $3 \times 10^2 + 1 \times 10$
- (D) $3 \times 10^3 + 1 \times 10$

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

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

9. The LARGEST prime number that is less than 100 is

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

10. 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

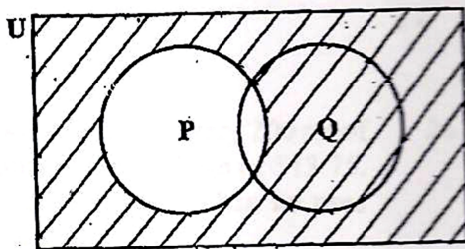
11. If $P = \{2, 3, 5, 7\}$, $Q = \{2, 3, 6\}$ and $S = \{2, 4, 5\}$ then $P \cap Q \cap S =$

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

12. If $U = \{1, 3, 5, 6, 8\}$ and $A = \{3, 6\}$, then the number of elements in A' is

- (A) 2
- (B) 3
- (C) 4
- (D) 5

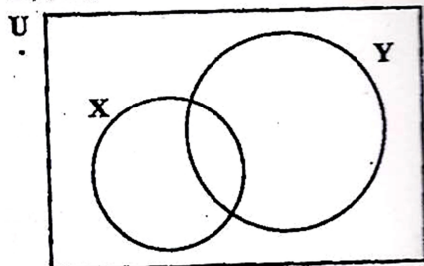
Item 13 refers to the Venn diagram below.



13. In the Venn diagram above, the shaded area represents

- (A) P'
 (B) $(P \cup Q)'$
 (C) $P' \cap Q'$
 (D) $P \cap Q'$

Item 14 refers to the Venn diagram below.



14. In the Venn diagram, $n(X) = 5$, $n(Y) = 9$ and $n(X \cup Y) = 10$.

What is $n(X \cap Y)$?

- (A) 4
 (B) 6
 (C) 14
 (D) 24

15. A plot of land is valued at \$18 000. Land tax is charged at the rate of \$0.70 per \$100. What is the TOTAL amount of tax to be paid for the land?

- (A) \$110.00
 (B) \$126.00
 (C) \$180.70
 (D) \$257.15

16. $3\frac{1}{4}\%$ of \$500 is

- (A) \$ 1.62
 (B) \$15.52
 (C) \$16.00
 (D) \$16.25

17. Susan bought a calculator for \$120. She paid a sales tax of 10% on the price. How much change should she receive from \$140?

- (A) \$ 8.00
 (B) \$12.00
 (C) \$28.00
 (D) \$32.00

18. The exchange rate for one United States dollar (US\$1.00) is two dollars and seventy cents in Eastern Caribbean currency (EC\$2.70). What is the value of US\$4.50 in EC currency?

- (A) \$ 1.67
 (B) \$ 6.00
 (C) \$ 7.20
 (D) \$12.15

19. A salesman is paid 5% of his sales as commission. His sales for last month were \$2 020. How much commission was he paid?

- (A) \$ 11.00
 (B) \$ 20.20
 (C) \$101.00
 (D) \$110.00

20. The cash price of a television set is \$350. When bought on hire-purchase, a deposit of \$35 is required, followed by 12 monthly payments of \$30. How much money is saved by paying cash?

- (A) \$10
 (B) \$25
 (C) \$40
 (D) \$45

21. A man pays 60 cents for every 200 m^3 of gas used, plus a fixed charge of \$13.75. How much does he pay when he uses $55,000 \text{ m}^3$ of gas?

(A) \$178.75
(B) \$175.25
(C) \$165.00
(D) \$151.25

22. A loan of \$8 000 was paid back in 2 years in monthly payments of \$400.00. The percentage profit on the loan was

(A) 5%
(B) $8\frac{1}{3}\%$
(C) $16\frac{2}{3}\%$
(D) 20%

23. $(x - 2)(3x - 4) =$

(A) $3x^2 - 6x - 8$
(B) $3x^2 - 2x - 8$
(C) $3x^2 + 10x + 8$
(D) $3x^2 - 10x + 8$

24. Althea saves \$x each month; but in June she saved \$4 more than twice her usual amount. In June Althea saved

(A) \$4x
(B) \$6x
(C) \$(x + 4)
(D) \$(2x + 4)

25. The expression $-2(x - 4)$ is the same as

(A) $-2x - 4$
(B) $-2x + 4$
(C) $-2x + 8$
(D) $-2x - 8$

26. $5(x + y) - 3(x - y) =$

(A) $2x$
(B) $2x + 2y$
(C) $2x + 8y$
(D) $8x + 8y$

27. If $m * n = \sqrt{mn - n^2}$ then $5 * 3 =$

(A) $\sqrt{6}$
(B) 3
(C) $\sqrt{15}$
(D) 6

28. When 6 is added to a number and the sum is divided by three the result is four. this statment written in mathematical symbol is.

(A) $\frac{6}{3} + x = 4$

(B) $\frac{6 + x}{3} = 4$

(C) $\frac{6 + x}{3} = \frac{4}{3}$

(D) $6 + \frac{x}{3} = 4$

29. Given that $3(x - 1) - 2(x - 1) = 7$, the value of x is

(A) 6
(B) 7
(C) 8
(D) 9

30. Given that $3 * 6 = 12$ and $2 * 5 = 9$, then $a * b$ may be defined as

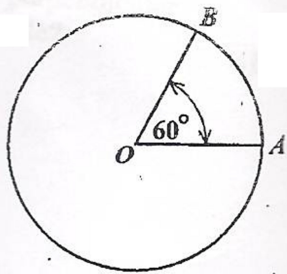
- (A) $4(b - a)$
 (B) $a^2 - b$
 (C) $6a - b$
 (D) $2a + b$

31. The sum of two numbers, x and y , is 18, and their difference is 14.

Which pair of equations below describes the above statement?

- (A) $x + y = 18$
 $x - y = 14$
 (B) $x + y = 32$
 $x - y = 4$
 (C) $2x + 2y = 18$
 $2x - 2y = 14$
 (D) $xy = 18$
 $x - y = 14$

Item 32 refers to the figure below



32. In the circle above, with centre O , the circumference is 20 cm. The length of the minor arc AB , in centimetres, is

- (A) $\frac{1}{60} \times 20$
 (B) $\frac{60}{360} \times 20$
 (C) $\left(\frac{360 - 60}{360}\right) \times 20$
 (D) 60×20

33. The volume of a cube of edge 10 cm is

- (A) 30 cm^3
 (B) 100 cm^3
 (C) 300 cm^3
 (D) 1000 cm^3

34. If it took a speed-boat 9 hours to travel a distance of 1080 km, what was its average speed?

- (A) 12 km/h
 (B) 102 km/h
 (C) 120 km/h
 (D) 1200 km/h

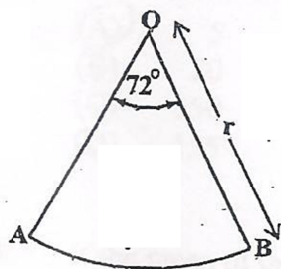
35. The distance around the edge of a circular pond is 88 m. The radius, in metres is

- (A) 88π
 (B) 176π
 (C) $\frac{88}{\pi}$
 (D) $\frac{88}{2\pi}$

36. 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

Item 37 refers to the following diagram.



37. AOB is a sector of a circle such that angle $AOB = 72^\circ$ and OB is r units long. The area of AOB is

- (A) $\frac{1}{5}\pi r$
 (B) $\frac{2}{5}\pi r$
 (C) $\frac{1}{5}\pi r^2$
 (D) $\frac{2}{5}\pi r^2$

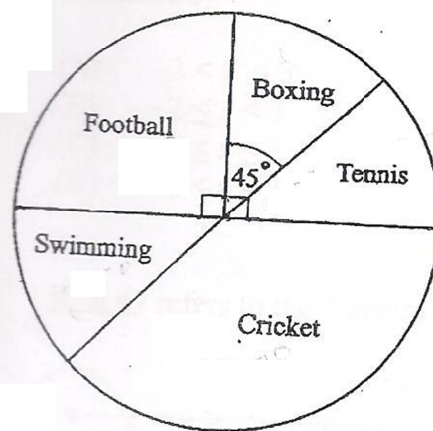
38. The area of a triangle is 30 cm^2 and its base is 10 cm . What is the perpendicular height, in cm, of the triangle?

- (A) 6
 (B) 12
 (C) 13
 (D) 17

39. An aircraft leaves A at 16:00 hrs and arrives at B at 19:30 hrs, travelling at an average speed of 550 kilometres per hour. A and B are in the same time zone. The distance from A to B, in kilometres, is

- (A) 907.5
 (B) 962.5
 (C) 1815
 (D) 1925

Items 40–41 refer to the diagram below which shows the sport chosen by 160 boys who participated in a games evening at their school.



40. The number of boys who chose football is

- (A) 40
 (B) 90
 (C) 110
 (D) 150

41. How many boys participated in cricket?

- (A) 54
 (B) 60
 (C) 110
 (D) 120

42. A bag contains 60 marbles of different colours. The probability of randomly selecting a red marble is $\frac{5}{12}$.

How many red marbles does the bag contain?

- (A) 5
 (B) 12
 (C) 17
 (D) 25

43. The heights, in cm, of ten students are 150, 152, 155, 153, 170, 160, 156, 165, 158, 155. The range is

(A) 5
(B) 20
(C) 150
(D) 155

44. If the mean of the four numbers 4, 8, x and 12 is 10, then x is

(A) 4
(B) 10
(C) 12
(D) 16

45. Each of the letters of the word 'CHANCE' is written on a slip of paper similar in size and shape. The slips of paper are then placed in a bag and thoroughly shaken. What is the probability of drawing a letter 'C'?

(A) $\frac{1}{6}$
(B) $\frac{1}{5}$
(C) $\frac{1}{3}$
(D) $\frac{2}{3}$

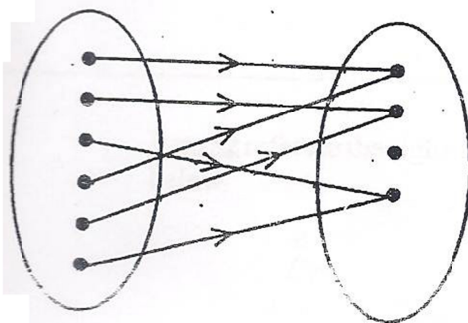
Item 46 refers to the diagram below.



46. The graph of the inequality in the diagram is defined by

(A) $-2 < x \leq 3$
(B) $-2 \leq x < 3$
(C) $-2 \leq x \leq 3$
(D) $-2 < x < 3$

Item 47 refers to the diagram below.



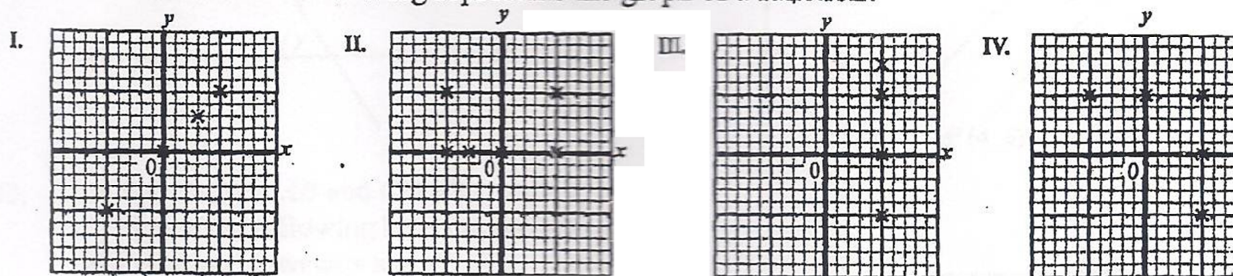
47. The relationship that BEST describes the mapping in the diagram is

(A) one-to-one
(B) one-to-many
(C) many-to-one
(D) many-to-many

48. Which of the following points lies on the line $y = 2x - 3$?

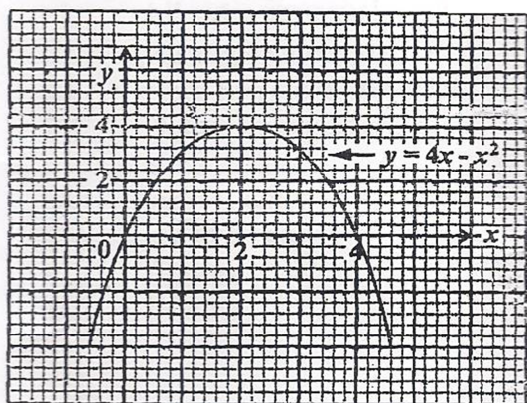
(A) (2, 3)
(B) (-2, -1)
(C) (4, 1)
(D) (0, -3)

49. Which of the following represents the graph of a function?



- (A) I
(B) II
(C) III
(D) IV

Items 50–51 refer to the following graph.



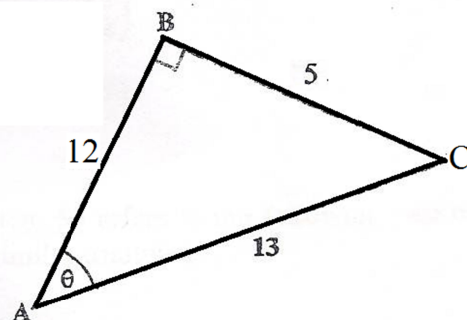
50. The maximum point of $y = 4x - x^2$ is

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

51. The values of x at the points where $y = 4x - x^2$ intersects $y = 0$ are

- (A) $x = 0$ and $x = 4$
(B) $x = 0$ and $x = 2$
(C) $x = 0$ and $x = -4$
(D) $x = 2$ and $x = 4$

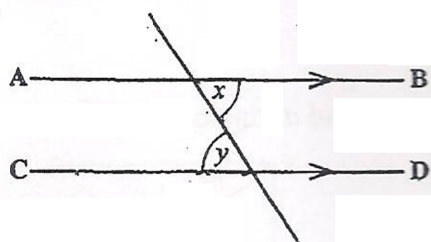
Item 52 refers to the right-angled triangle below.



52. In the right-angled triangle, $\tan \theta$ is

- (A) $\frac{5}{13}$
(B) $\frac{5}{12}$
(C) $\frac{12}{5}$
(D) $\frac{13}{5}$

Item 53 refers to the following diagram.



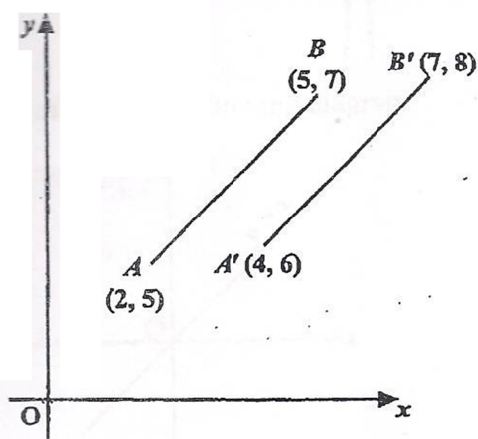
53. In the diagram AB and CD are parallel. Which of the following BEST describes the relation between x and y ?

- (A) $x + y < 2x$
- (B) $x = y$
- (C) $x + y > 2x$
- (D) $x > y$

54. Which of the following BEST describes the properties of an equilateral triangle?

- I. All sides are equal.
 - II. All angles are equal.
 - III. Only two sides are equal.
 - IV. Only two angles are equal.
- (A) I and II only
 - (B) II and III only
 - (C) III only
 - (D) IV only

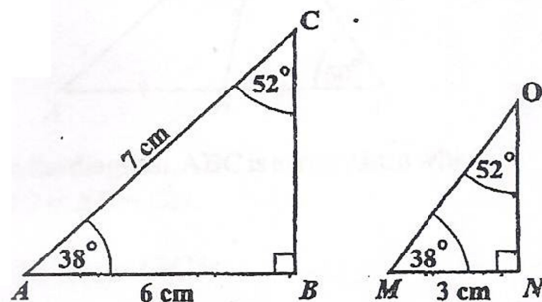
Item 55 refers to the diagram below.



55. In the diagram, the translation by which AB is mapped onto $A'B'$ is represented by

- (A) $\begin{pmatrix} 1 \\ 1 \end{pmatrix}$
- (B) $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$
- (C) $\begin{pmatrix} 3 \\ 2 \end{pmatrix}$
- (D) $\begin{pmatrix} 5 \\ 3 \end{pmatrix}$

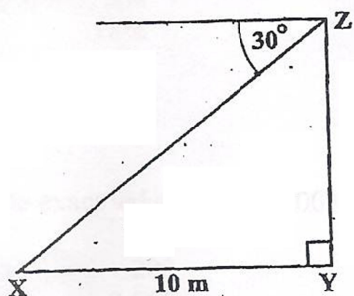
Item 56 refers to the following pair of similar triangles.



56. The length of MO , in centimetres, is

- (A) 3
- (B) 3.5
- (C) 6
- (D) 7

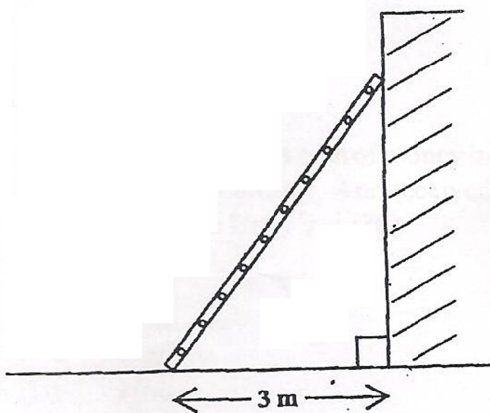
Item 57 refers to the diagram below.



57. The diagram, not drawn to scale, shows the angle of depression of a point X from Z is 30° . If X is 10 metres from Y, the height of YZ, in metres, is

- (A) $10 \cos 30^\circ$
- (B) $10 \cos 60^\circ$
- (C) $10 \sin 30^\circ$
- (D) $10 \tan 30^\circ$

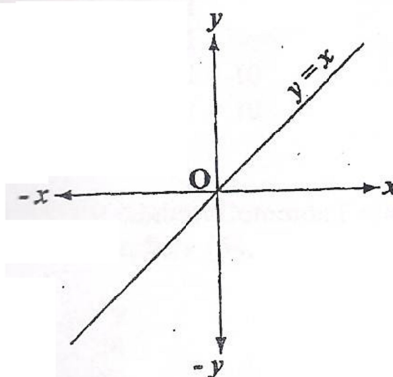
Item 58 refers to the diagram below which shows a ladder 5 metres long leaning against a vertical wall. The foot of the ladder is 3 metres away from the wall.



58. How far up the wall does the ladder reach?

- (A) 4 m
- (B) 6 m
- (C) 8 m
- (D) 15 m

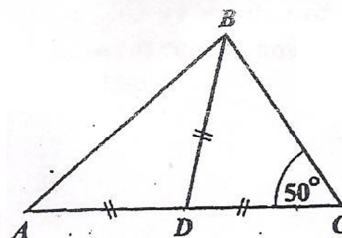
Item 59 refers to the following diagram.



59. In the diagram, if the line $y = x$ is rotated anti-clockwise about O through 90° , what is its image?

- (A) $y = 0$
- (B) $x = 0$
- (C) $y = -x$
- (D) $y = x$

Item 60 refers to the following diagram.



60. In the diagram, ABC is a triangle in which $AD = BD = CD$.

The angle ABC is

- (A) 40°
- (B) 50°
- (C) 80°
- (D) 90°

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.