June 2014

1. In standard form 0.0325 is written as

(A) 3.25×10^{-1}
(B) 3.25×10^{-2}
(C) 3.25×10^{-4}
(D) 3.25×100

2. Express 0.12 as a fraction in its lowest terms.

(A) $\frac{1}{9}$
(B) $\frac{3}{5}$
(C) $\frac{1}{8}$
(D) $\frac{3}{25}$

3. 540 beads are shared in the ratio 4:5. The LARGER share of beads is

(A) 60
(B) 240
(C) 300
(D) 432

4. If $235 \times 48.7 = 11\,444.5$, then $23.5 \times 0.487 =$

(A) 11.4445
(B) 114.445
(C) 1 144.45
(D) 11 444.4

5. $12\frac{1}{2}\%$ of a sum of money is \$40. What is the sum of money?

(A) \$ 45
(B) \$ 320
(C) \$ 500
(D) \$4 500

6. There are 40 students in a class. Girls make up 60% of the class. 25% of the girls wear glasses. How many girls in the class wear glasses?

(A) 6
(B) 8
(C) 10
(D) 15

7. The next term in the sequence

1, 6, 13, 22, 33 is

(A) 44
(B) 45
(C) 46
(D) 52

8. What is the value of the digit 2 in the number 48.621?

(A) $\frac{2}{100}$
(B) $\frac{2}{10}$
(C) 2
(D) 200

9. The square root of 181 lies between

(A) 13 and 14
(B) 45 and 46
(C) 12 and 13
(D) 11 and 13

10. By the distributive law $49 \times 17 + 49 \times 3 =$

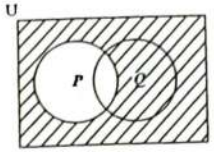
(A) $52 + 66$
(B) 52×66
(C) $49 + 20$
(D) 49×20

a(b+c)

11. Which of the following sets is defined by $\{x \in Z : -2 \leq x \leq 4\}$?

(A) {0, 1, 2, 3, 4}
(B) {1, 2, 3, 4}
(C) {−1, 0, 1, 2, 3}
(D) {−2, −1, 0, 1, 2, 3, 4}

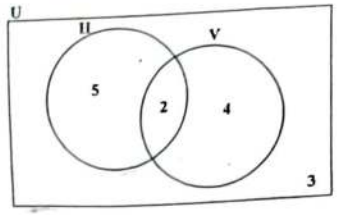
Item 12 refers to the Venn diagram below.



12. The shaded region represents

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

Item 13 refers to the Venn diagram below.



13. In the Venn diagram

U = {students who play games}
H = {students who play hockey}
V = {students who play volleyball}

The number of students in each set is indicated. How many students do NOT play volleyball?

(A) 2
(B) 3
(C) 5
(D) 8

14. If Q = {a, b, c} how many subsets can be obtained from the set Q?

(A) $2 + 3$
(B) 2×3
(C) 3^2
(D) 2^3

15. A dress which costs \$180 is being sold at a discount of 10%. The amount of the discount is

(A) \$ 1.80
(B) \$ 10.00
(C) \$ 18.00
(D) \$170.00

16. An article bought for \$125 was sold for \$175. The profit as a percentage of the cost price was

(A) 28.6
(B) 40
(C) 50
(D) 71.4

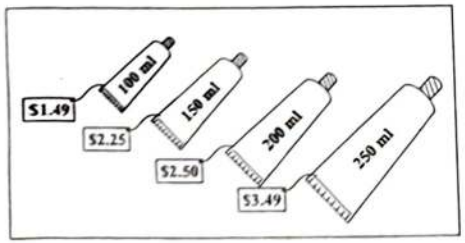
17. If TT\$6.00 is equivalent to US\$1.00, then TT\$15.00 in US dollars is

(A) \$0.25
(B) \$0.40
(C) \$2.50
(D) \$4.00

18. A dinner at a restaurant was advertised at \$60 plus 18% tax. The total bill for this dinner was

(A) \$60.00
(B) \$70.80
(C) \$78.00
(D) \$81.60

Item **19** refers to toothpaste which is sold in tubes containing four different amounts.



19. Which amount is the BEST buy?

(A) 100 ml
(B) 150 ml
(C) 200 ml
(D) 250 ml

20. Mary invested \$200 for 3 years at 5% per annum. John invested \$300 at the same rate. If they both received the same amount of money in simple interest, for how many years did John invest his money?

(A) 1½
(B) 2
(C) 3
(D) 10

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

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

22. If the simple interest on \$900 for 3 years was \$108, what was the rate of interest?

(A) 3%
(B) 4%
(C) 12%
(D) 25%

23. If $r * s = s^r$, then $3 * 2 =$

(A) 8
(B) 9
(C) 12
(D) 27

24. $\frac{1}{5x} + \frac{2}{3x} =$

(A) $\frac{3}{8x^2}$
(B) $\frac{3}{8x}$
(C) $\frac{13}{15x^2}$
(D) $\frac{13}{15x}$

25. If $\frac{p}{5} = 20$, then $p =$

(A) $20 - 5$
(B) $20 + 5$
(C) $20 \div 5$
(D) 20×5

26. If $x = -2$, $y = 3$, $t = 2$, then $\left(\frac{x}{y}\right)^t =$

(A) $-\frac{4}{9}$
(B) $\frac{4}{9}$
(C) $\frac{4}{3}$
(D) $\frac{9}{4}$

27. $(8a)^2 =$

(A) $16a$
(B) $64a$
(C) $16a^2$
(D) $64a^2$

28. If $5(2x - 1) = 35$, then $x =$

(A) -4
(B) $\frac{1}{4}$
(C) 3
(D) 4

29. Given that $2x + 3 \geq 9$, the range of values of x is

(A) $x > 3$
(B) $x \geq 3$
(C) $x > 6$
(D) $x \geq 6$

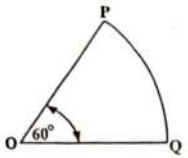
30. If $a = 3$ and $ab = 6$, then $a^2 - b^2 =$

(A) 1
(B) 2
(C) 5
(D) 13

31. When 6 is added to a number and the sum is divided by three, the result is four. This statement written in mathematical symbols is

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

Item 32 refers to the figure below.



32. The figure above, **not drawn to scale**, shows a sector of a circle, centre O. The length of the minor arc PQ is 8 cm. What is the circumference of the circle?

(A) 16 cm
(B) 24 cm
(C) 48 cm
(D) 64 cm

33. How many kilograms are there in one tonne?

(A) 10
(B) 100
(C) 1 000
(D) 10 000

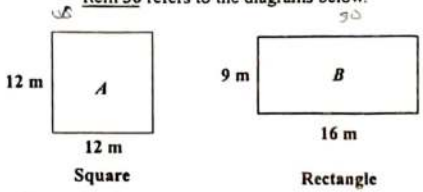
34. 2500 millimetres expressed in metres is

(A) 0.25
(B) 2.5
(C) 25
(D) 250

35. The volume, in cm³, of a cube of edge 3 cm is

(A) 9
(B) 18
(C) 27
(D) 54

Item 36 refers to the diagrams below.



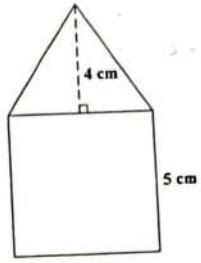
36. Which of the following statements is true about the perimeters of the figures *A* and *B*?

(A) Perimeter of *A* = Perimeter of *B*
(B) Perimeter of *A* > Perimeter of *B*
(C) Perimeter of *A* ≥ Perimeter of *B*
(D) Perimeter of *A* < Perimeter of *B*

37. A man started a journey at 09:30 h and arrived at his destination, in the same time zone, at 13:30 h on the same day. If his average speed was 30 km/h, then the distance, in km, for the journey was

(A) 120
(B) 133
(C) 400
(D) 430

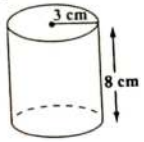
Item 38 refers to the diagram below.



38. The figure above, **not drawn to scale**, consists of a triangle resting on a square of side 5 cm. The height of the triangle is 4 cm. What is the TOTAL area of the figure?

(A) 35 cm²
(B) 45 cm²
(C) 50 cm²
(D) 100 cm²

Item 39 refers to the diagram below.



39. The diagram, **not drawn to scale**, shows a cylinder of radius 3 cm and height 8 cm. The volume is

(A) 12 π cm³
(B) 48 π cm³
(C) 72 π cm³
(D) 192 π cm³

40. On leaving Trinidad, the time on a pilot's watch was 23:00 h. When he arrived at his destination in the same time zone on the next day, his watch showed 03:00 h. How many hours did the flight take?

(A) 4
(B) 16
(C) 20
(D) 26

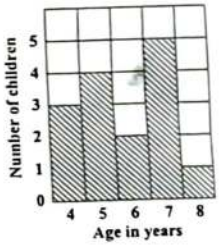
Item 41 refers to the following information.

4	7	10	18	18	27

41. The mode of the numbers is

(A) 10
(B) 14
(C) 18
(D) 27

Item 42 refers to the bar chart below.



42. The bar chart shows the ages of children who took part in a survey.

How many children took part in the survey?

(A) 5
(B) 15
(C) 75
(D) 87

43. In a class of 20 students, 12 are girls. What is the probability that a student chosen at random is a boy?

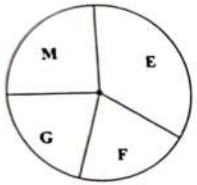
(A) $\frac{1}{20}$

(B) $\frac{8}{20}$

(C) $\frac{12}{20}$

(D) $\frac{8}{12}$

44. The pie chart below, **drawn to scale**, shows how a student used 12 hours in studying English (E), Maths (M), French (F) and Geography (G).



The amount of time spent studying Mathematics is APPROXIMATELY

(A) 1 hour
(B) 2 hours
(C) 3 hours
(D) 4 hours

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 the bag thoroughly shaken. What is the probability of drawing a letter 'C'?

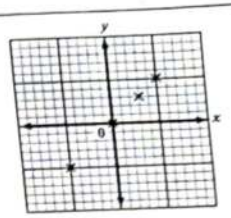
(A) $\frac{1}{3}$

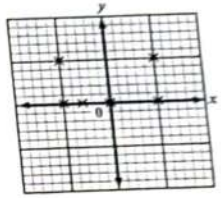
(B) $\frac{1}{5}$

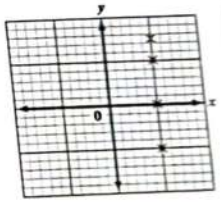
(C) $\frac{1}{6}$

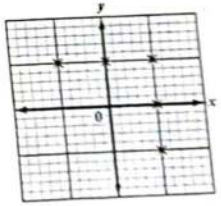
(D) $\frac{2}{3}$

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

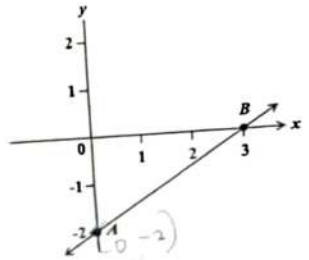
(A)


(B)


(C)


(D)


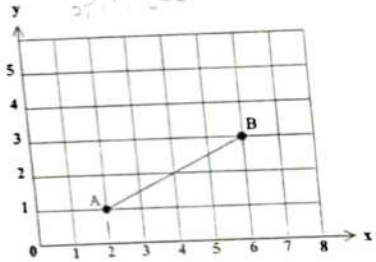
Item 47 refers to the graph below.



47. The straight line AB cuts the y axis at

(A) (0, 3)
(B) (0, 2)
(C) (3, −2)
(D) (0, −2)

Item 48 refers to the graph below.



48. The gradient of AB in the graph above is

(A) 2

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

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

(D) −2

Item 49 refers to the diagram below.



49. The inequality above is defined by

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

50. If $f(x) = 2x^2 - 1$, then $f(3) =$

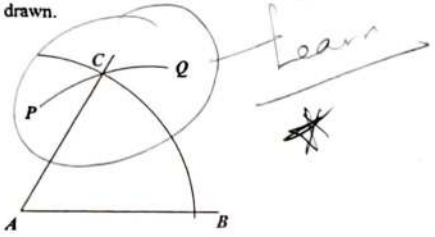
(A) −32
(B) −19
(C) 17
(D) 35

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

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

Item 52 refers to the diagram below of a construction.

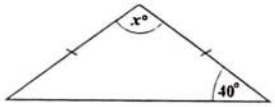
With centre A, an arc BC is drawn. With centre B, and the same radius, the arc PCQ is drawn.



52. What is the measure of $\angle BAC$?

(A) 30°
(B) 45°
(C) 60°
(D) 75°

Item 53 refers to the isosceles triangle below.



53. In the triangle, the value of x is

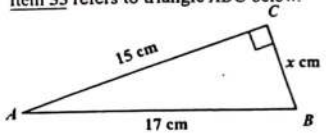
(A) 40
(B) 80
(C) 100
(D) 140

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

I. All sides are equal.
II. All angles are equal.
III. Two sides are equal.
IV. Two angles are equal.

(A) I and II only
(B) II and III only
(C) III only
(D) IV only

Item 55 refers to triangle ABC below.



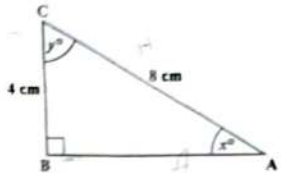
55. In the triangle ABC, **not drawn to scale**, AB is 17 cm, AC is 15 cm, BC is x cm and angle BCA is 90°. The value of x is

(A) 7
(B) 8
(C) 9
(D) 12

56. The image of a point P(−2, 3) under a translation $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$ is

(A) (−6, 12)
(B) (−5, −1)
(C) (5, 1)
(D) (1, 7)

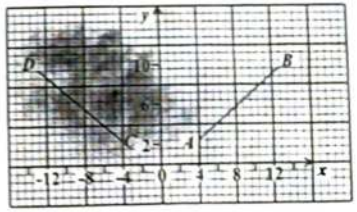
Item 57 refers to the diagram below.



57. In the right-angled triangle above, which trigonometric ratio is equal to $\frac{4}{8}$?

(A) sin x
(B) tan y
(C) cos x
(D) tan x

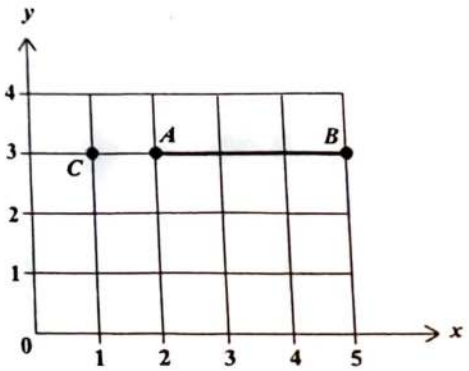
Item 58 refers to the following graph.



58. In the graph above, the line CD is the image of AB after

(A) a rotation through 90° centre O
(B) a reflection in the y-axis
(C) a translation by vector $\begin{pmatrix} -4 \\ -8 \end{pmatrix}$
(D) an enlargement of scale factor −1

Item 59 refers to the diagram below.



59. The line segment AB is rotated through 90° clockwise about the point C.

The coordinates of A', the image of A, are

(A) (1, 1)
(B) (1, 2)
(C) (1, 4)
(D) (2, 2)

60. In a triangle ABC, angle $A = x°$ and angle $B = 2x°$. What is the size of angle C?

(A) 60°

(B) 45°

(C) $\left(\frac{180}{3x}\right)^{\circ}$

(D) $(180 - 3x)°$

END OF TEST

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