1. A circular park of 20 meter diameter has a circular path just inside the boundary of width 1 meter. The area of the path is (in sq.m)

(a) 15π

(c) 19π

(b) 17π

(d) 25π

2. In a triangle ABC, $\angle A = 90°$ and D is the midpoint of AC. The value of $BC^2 - BD^2$ is equal to

(a) AD^2

(c) $3AD^2$

(b) $2AD^2$

(d) $4AD^2$

3. 40% of ? + 180 = 564.

(a) 960

(c) 950

(b) 860

(d) 850

4. Any cyclic parallelogram having unequal adjacent sides is necessarily a

(a) Square

(b) Rectangle

(c) Rhombus

(d) Trapezium

5. The factorization of $25 - p^2 - q^2 - 2pq$ is

(a) $(5 + p + q)(5 - p + q)$

(b) $(5 + p + q)(5 - p - q)$

(c) $(5 + p + q)(5 + p - q)$

(d) $(5 + p - q)(5 - p + q)$

6. The value of $\frac{6.98 \times 6.98 - 2.02 \times 2.02}{4.96}$ is

(a) 9

(b) 4.96

(c) 3.72

(d) 6.76

7. The value of $9x^2 + 49y^2 - 42xy$ when $x = 15$ and $y = 3$ is

(a) 636

(c) 386

(b) 576

(d) 456

8. If $\left(x - \frac{1}{x}\right) = 5$, the value of $x^2 + \frac{1}{x^2}$ is

(a) 23

(c) 25

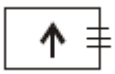
(b) 27

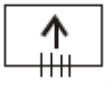
(d) 29

9. Complete the series: 

(a) 

(c) 

(b) 

(d) 

10. Rectangle : Square : : Ellipse : ?

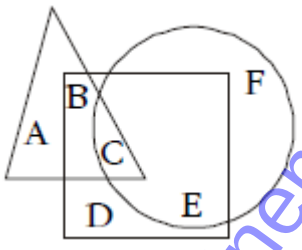
(a) Centre

(c) Circle

(b) Diameter

(d) Radius

11. In the given figure, the triangle represents girls, square represents sportspersons and circle represents coaches. Which portion of the figure represents girls who are sportspersons but not coaches?



(a) A

(c) C

(b) B

(d) D

12. Five boys A, B, C, D and E are standing in a row. A is between C and D and B is between D and E. Which of the following pairs represents the boys standing at both the ends?

(a) C, B

(b) E, C

(c) E, A

(d) A, C

13. A merchant buys goods at 25% off the list price. He desires to mark the goods so that he can give a discount of 20% on the marked price and still clear a profit of 25% on the selling price. What percent of the list price must he mark the goods?

(a) 125%

(b) 100%

(c) 120%

(d) 80%

14. The bottom, side, and front areas of a rectangular box are known. The product of these areas is equal to

(a) The volume of the box

(b) The square root of the volume

(c) Twice the volume

(d) The square of the volume.

15. P can do a piece of work in 9 days. Q is 50% more efficient than P. The number of days it takes Q to do the same piece of work is

(a) $13\frac{1}{2}$

(b) $4\frac{1}{2}$

(c) 6

(d) 3

16.

$$\begin{array}{r} B\,2 \\ \times\ 7\,B \\ \hline 6396 \end{array}$$

In the product shown above, B is a digit. The value of B is

(a) 3

(c) 6

(b) 5

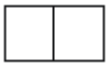
(d) 8

17. The figure given below is made of 3 small cubes.

Which best shows the side view of the figure?

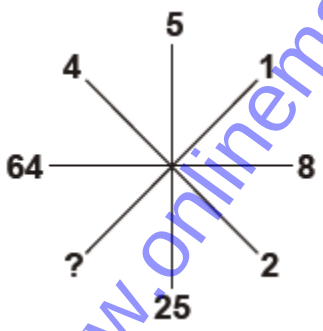
(a) 

(C) 

(b) 

(d) 

18. Insert the missing character



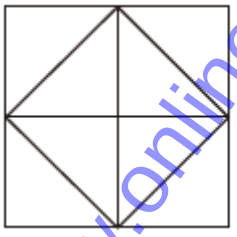
(a) 1

(c) 3

(b) 2

(d) 4

19. Count the number of triangles in the following figure



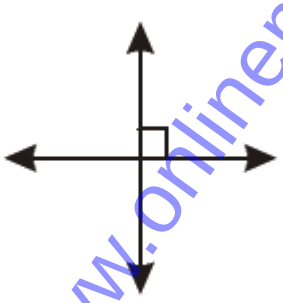
(a) 8

(c) 12

(b) 10

(d) 14

20. Which of the following is best described in the given figure?



(a) Acute angles

(b) Obtuse angles

(c) Parallel lines

(d) Perpendicular lines

21. Which shows 833,000 written in scientific notation?

(a) 8.33×10^3

(b) 8.33×10^4

(c) 8.33×10^5

(d) 8.33×10^6

22. Nina made a triangle by cutting the corner of a sheet of paper. One angle is 45°. What is the measure of the third angle of Nina's triangle?

(a) 30^0

(b) 45^0

(c) 55^0

(d) 60^0

23. Subtract:

$$4\frac{3}{4} - 2\frac{1}{2} =$$

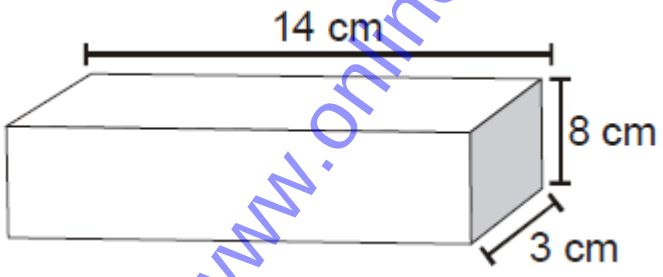
(a) $1\frac{1}{4}$

(b) $1\frac{3}{4}$

(c) $2\frac{1}{4}$

(d) $2\frac{3}{4}$

24. This rectangular prism has a length of 14 cm, a height of 8 cm, and a width of 3 cm.
What is the volume?



(a) 25 cu cm

(b) 42 cu cm

(c) 112 cu cm

(d) 336 cu cm

25. Which expression represents the product of n and 25?

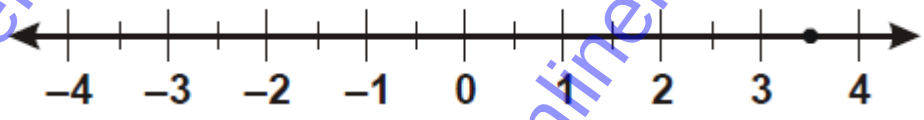
(a) 25n

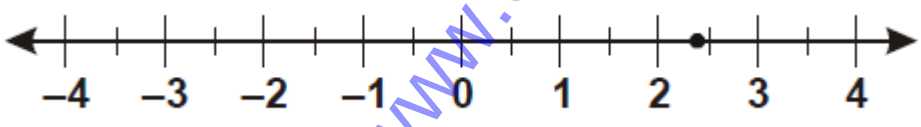
(b) 25 – n

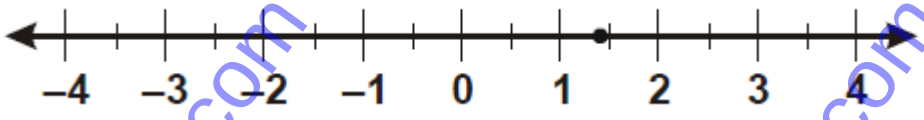
(c) 25 + n

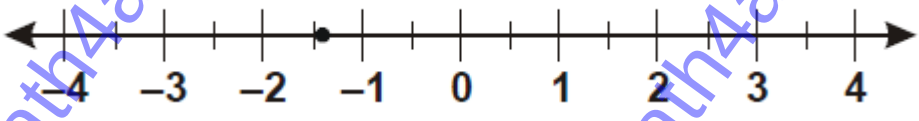
(d) 25 ÷ n

26. Which point on the number line best represents 1.35?

(a) 

(b) 

(c) 

(d) 

27. What is the prime factorization of 45?

(a) $2^3 \times 5$

(b) $3^2 \times 5$

(c) $5^2 \times 3$

(d) $5^2 \times 9$

28. 11.3 × 2.7 =

(a) 29.31

(c) 30.31

(b) 29.51

(d) 30.51

29. Which of the following shows the next step using the least common denominator to simplify $\frac{7}{8}-\frac{5}{6}$?

(a) $\left(\frac{7}{8}\times\frac{3}{3}\right)-\left(\frac{5}{6}\times\frac{4}{4}\right)$

(c) $\left(\frac{7}{8}\times\frac{5}{5}\right)-\left(\frac{5}{6}\times\frac{7}{7}\right)$

(b) $\left(\frac{7}{8}\times\frac{4}{4}\right)-\left(\frac{5}{6}\times\frac{3}{3}\right)$

(d) $\left(\frac{7}{8}\times\frac{7}{7}\right)-\left(\frac{5}{6}\times\frac{5}{5}\right)$

30. Ronald can throw a ball 253/5 meters high. Sam can throw the same ball 145/3 meters high. How much farther can Ronald throw the ball than Sam?

(a) 32/5 m

(c) 13/5 m

(b) 34/15 m

(d) 14/5 m

31. In a parking lot, 1 out of every 8 cars is blue. What percent of the cars in this lot are blue?

(a) 1.25%

(c) 9%

(b) 7%

(d) 12.5%

32. A duck flew at 18 km per hour for 3 hours, then at 15 km per hour for 2 hours. How far did the duck fly in all?

(a) 69 km

(c) 81 km

(b) 75 km

(d) 84 km

33. A local market buys oranges at 3 for 10 cents and sells them at 5 for 20 cents. How many oranges must it sell in order to make a profit of $1.00?

(a) 130

(c) 150

(b) 140

(d) 120

34. A man spent 1/3 of his money and then lost 2/3 of the remainder. He was left with $12.00. How much did he start with?

(a) $60

(c) $50

(b) $54

(d) $70

35. If 75 were divided into three parts in the proportions 2 to 3 to 5, what is the smallest part?

(a) 15

(c) 11

(b) 12

(d) 18

36. Jesse has a season's subscription to the local drama theater. His seat is in the 5th row from the front and the 12th row from the back of the theater. His seat is 8 seats from the right aisle and 12 seats from the left aisle. If each row has the same number of seats, how many seats are in the entire theater?

(a) 308

(c) 304

(b) 326

(d) 212

37. Mombasa is on the swim team. He swims his first 3 laps without weights and the next 5 laps with weights. Jamie is also on the swim team, but she swims her first 5 laps with weights and her next 3 laps without. If Mombasa and Jamie each swim 40 laps, using their own patterns of carrying weights, during how many laps will they both be using weights at the same time?

(a) 14

(c) 15

(b) 17

(d) 10

38. Jose works in the produce department of the supermarket. He is arranging grapefruits in the shape of a triangle. When he has finished, the first (or top) row had 1 grapefruit, the second row had 3 grapefruits, the third row had 6 grapefruits, the fourth row had 10 grapefruits, and so on for a total of 7 rows. How many grapefruits did Jose use in the display?

(a) 84

(c) 62

(b) 92

(d) 86

39. A chocolate bar is separated into several equal pieces. If one person eats one quarter of the pieces and a second person eats one half of the remaining pieces, there are six pieces left over. Into how many pieces was the original bar divided?

(a) 11

(c) 14

(b) 16

(d) 15

40. A manufacturer of novelty buttons uses square sheets of metal that are 24 inches on each side. The press punches out 144 circular buttons, each with a diameter of 2 inches, from a sheet. How much metal is wasted from each sheet?

(a) 154.3 sq inches

(c) 123.6 sq inches

(b) 162.1 sq inches

(d) 147.5 sq inches

41. The Continental Hockey League consists of two conferences, each with six teams. Every team plays the teams within its own conference twice and plays each team in the other conference once. How many games are played during the season?

(a) 66

(c) 60

(b) 63

(d) 72

42. All of the numbers from 1 to 50 are written on ping pong balls and put into a box. What is the probability of drawing a prime number from the box?

(a) 2/10

(c) 5/10

(b) 4/10

(d) 3/10

43. Sam bought 4 red-colored pencils, 2 blue-colored pencils and 7 black-colored pencils. What percent of pencils were black-colored?

(a) 54.19%

(c) 54.85%

(b) 53.85%

(d) 52.85%

44. Find the simple interest on a principal of $240 for a period of 5 years at an interest rate of 2%.

(a) 24

(c) 50

(b) 44

(d) 32

45. The strength of an English class was more than 30 students. Which of the following inequalities best describes the situation where the number of students is represented by s?

(a) $s < 30$

(c) $s > 30$

(b) $s \leq 30$

(d) $s \geq 30$

46. A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?

(a) 400

(c) 700

(b) 600

(d) 900

47. A factory requires 42 machines to produce a given number of articles in 63 days. How many machines would be required to produce the same number of articles in 54 days?

(a) 49

(c) 50

(b) 20

(d) 60

48. There are 500 children in a school. For a P.T drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children left out in this arrangement?

(a) 18 children

(c) 13 children

(b) 10 children

(d) 16 children

49. The area of trapezium is $34cm^2$ and the length of one of the parallel sides is 10cm and its height is 4cm. Find the length of the other parallel side.

(a) 7 cm

(c) 3 cm

(b) 5 cm

(d) 8 cm

50. A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and height is 1 m

(a) $3250\ m^2$

(c) $1980\ m^2$

(b) $2302\ m^2$

(d) $1250\ m^2$

Answers:

1. c	2. c	3. a	4. b	5. b	6. a
7. b	8.b	9. a	10. c	11. b	12.b
13.a	14. d	15. c	16. d	17. a	18. a
19. c	20. d	21. c	22. b	23. c	24. d
25. a	26. c	27. b	28. d	29.a	30. b
31. d	32. d	33. c	34.b	35. a	36. c
37. d	38. a	39.b	40. c	41. a	42. d
43. b	44. a	45. c	46.c	47. a	48. d
49. a	50. c				