CLASS 8: MATH SAMPLE PAPER

1. Evaluate. 5^{-2}
   A) 1/20
   B) 1/25
   C) 25/9
   D) 25/1

2. Simplify and express the result in power notation with positive exponent.
   $(-5)^5 \div (-5)^8$
   A) $(\frac{1}{5})$
   B) $(\frac{1}{(-5)^3})$
   C) $(\frac{1}{(-5)^5})$
   D) $(\frac{1}{(-5)^{-2}})$

3. Find the value of $(6° + (4)^{-1}) \times 2^2$
   A) 5
   B) 6
   C) 4
   D) 10

4. Express the following numbers in usual form 5.5×10^4
   A) 55000
   B) 550000
   C) 5500
   D) 50000

5. In a stack there are 5 books each of thickness 20mm and 5 paper cards each of thickness 0.016 mm. What is the total thickness of the stack?
   A) 1.0008×10^2
   B) 1.0008×10^3
   C) 1.008×10^2
   D) 1.0007×10^2

6. Express the number appearing in the following statements in standard form. Thickness of a thick paper is 0.08 mm
   A) 7×10^{-3}
   B) 7×10^{-2}
   C) 8×10^{-2}
   D) 9×10^{-2}

7. Express the following numbers in standard form. (0.0000075)
   A) 8×10^{-3}
   B) 7.5×10^{-6}
   C) 7×10^{-6}
   D) 7.5×10^{-7}

8. Find the value of m for which $5^m \div 5^{-4} = 5^5$
   A) m= 4
   B) m=3
   C) m=7
   D) m=1

9. Express the following numbers in usual form (3.614920×10^6)
   A) 3614920
   B) 361490200
   C) 36149
   D) 3614922

10. Find the value of $(5^{-1} + 4^{-1} + 5^{-1})^{0}$

A) 2
B) 9
C) 3
D) 1

11. Add the following. ab – bc, bc – ca, ca – ab
    A) 1
    B) 8
    C) 6
    D) 0

12. Subtract 7a – 7ab + 3b + 12 from 12a – 9ab + 5b – 3
    A) 5a-2ab+2b-15
    B) 8a-2ab+2b-10
    C) 8a-2ab+2b-15
    D) 8a-ab+b-15

13. Find the product of the following pair. (4p, 7pq)
    A) $28p^2q$
    B) 29p
    C) $28p^2q^2$
    D) 28pq

14. Obtain the volume of rectangular boxes with the following length, breadth and height respectively. 3p, 4q, 8r
    A) 96pqr
    B) 95pqr
    C) 94pqr
    D) None of These

15. Obtain the volume of rectangular boxes with the following length, breadth and height respectively 2a, 22b, 222c
    A) 9768abc
    B) 9876abc
    C) 9123abc

D) 9576abc

16. Carry out the multiplication of the expressions in each of the following pairs. 5p, q + r
    A) 5pq+5pr
    B) pq+4pr
    C) 4pq+pr
    D) 5pq+2pr

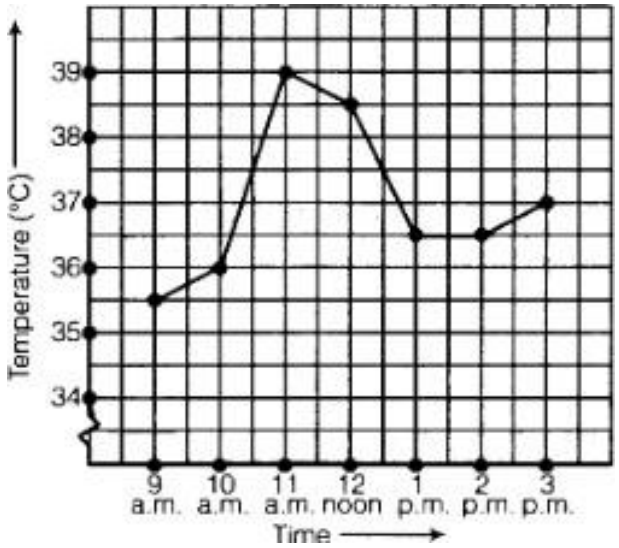
17. Simplify. (a + b) (c – d) + (a – b) (c + d) + 2 (ac + bd)
    A) 4ac
    B) 5ac
    C) 3ac
    D) 10ac

18. Using identities, evaluate. 75^2
    A) 5041
    B) 5040
    C) 5625
    D) 5042

19. Using identities, evaluate. 9.9^2
    A) 79.21
    B) 90.21
    C) 98.01
    D) 79.22

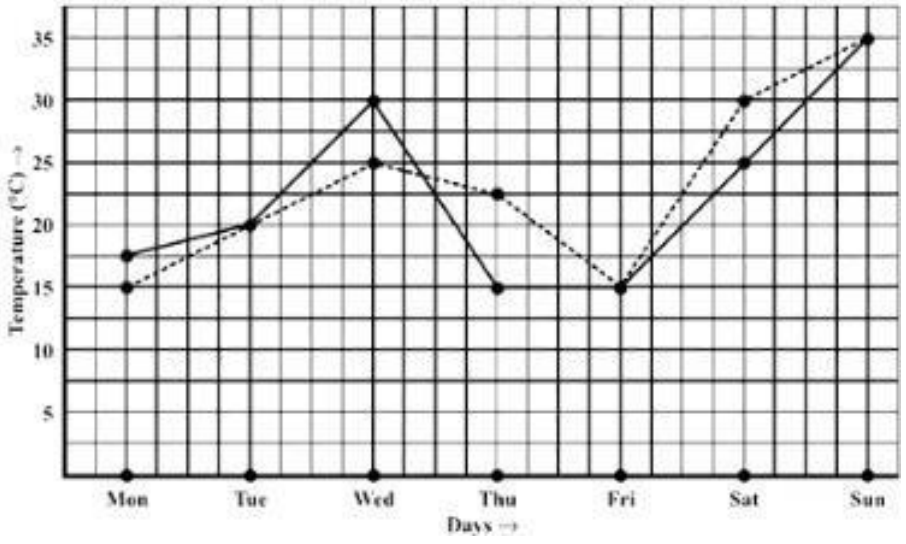
20. Add the following. a – b + 2ab, b – c + bc, c – a + ac
    A) ab+bc+ac
    B) ab+bc+c
    C) ab+3bc+4ac
    D) 2ab+bc+ac

21. The following graph shows the temperature of a patient in a hospital, recorded every hour. What was the patient's temperature at 1 p.m.?



A) 36.5^{o} C
B) 36.8^{o} C
C) 30.5^{o} C
D) 34.5^{o} C

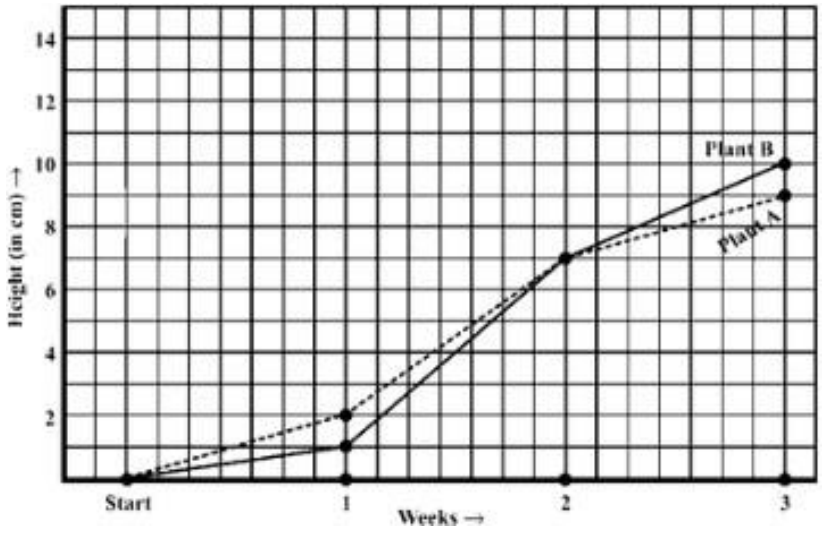
22. The following graph shows the temperature forecast and the actual temperature for each day of a week. On which days was the forecast temperature the same as the actual temperature?



A) Tue, Fri, Sun

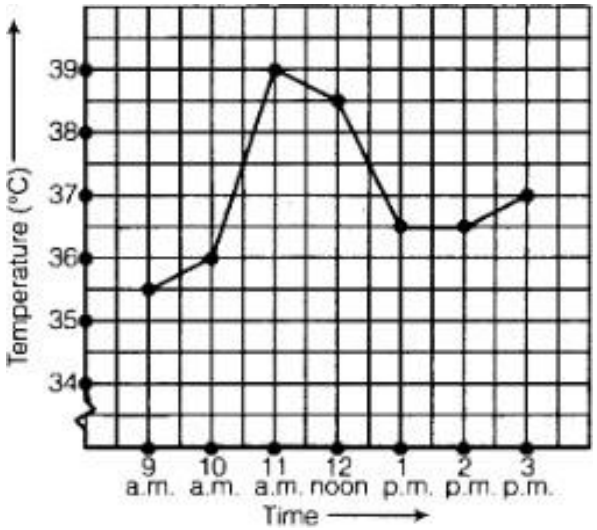
B) Wed, Fri
C) Sun, Sat, Mon
D) Tue, Fri, Mon

23. For an experiment in Botany, two different plants, plant A and plant B were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following graph. How much did Plant B grow during the 2nd week?



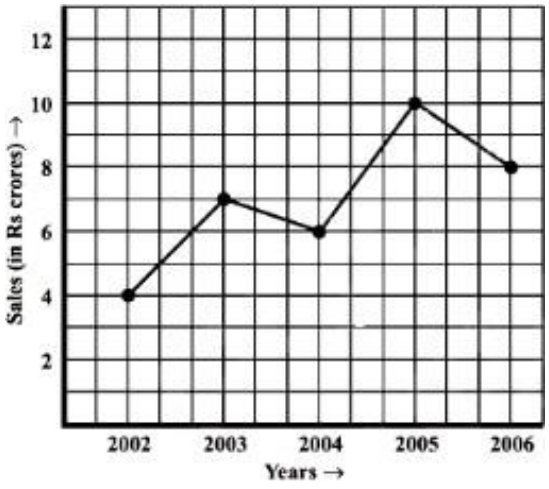
A) 3cm
B) 4cm
C) 7cm
D) 1cm

24. The following graph shows the temperature of a patient in a hospital, recorded every hour. When was the patient's temperature 37.5° C?



A) 1pm
B) 2pm
C) 12 noon
D) 12:30 noon

25. The following line graph shows the yearly sales figures for a manufacturing company. In which year was there the greatest difference between the sales as compared to its previous year?



A) 2005
B) 2006
C) 2004
D) 2002

26. Draw the graphs for the following tables of values, with suitable scales on the axes. Distance travelled by a car. How much distance did the car cover during the period 7 a.m. to 8 a.m.?

Time (in hours)	6 a.m.	7 a.m.	8 a.m.	9 a.m.
Distances (in km)	40	80	120	160

A) 20Km
B) 30Km
C) 25Km
D) 40Km

27. A flooring tile has the shape of a parallelogram whose base is 24 cm and the corresponding height is 10 cm. How many such tiles are required to cover a floor of area 1080 m2?
    A) 40000 tiles
    B) 45000 tiles
    C) 4500 tiles
    D) 4000 tiles

28. Find the area of a rhombus whose side is 5 cm and its altitude is 4.8cm. If one of its diagonals is 8 cm, find length of other diagonal.
    A) 26 cm^2, 6 cm
    B) 24 cm^2, 6 cm
    C) 26 cm^2, 7 cm
    D) 34 cm^2, 8 cm

29. Diagram of the adjacent picture frame has outer dimensions = 24 cm × 28 cm and inner dimensions 16 cm × 20 cm. Find the area of each section of the frame, if the width of each section is same.

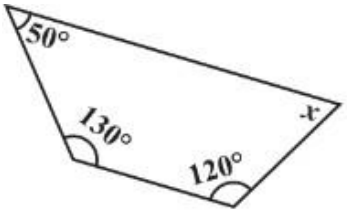
A) 80sqcm, 96sqcm, 80sqcm, 96sqcm
B) 80sqcm, 96sqcm, 85sqcm, 96sqcm
C) 80sqcm, 95sqcm, 80sqcm, 96sqcm
D) 81sqcm, 96sqcm, 80sqcm, 96sqcm

30. Find the side of a cube whose surface area is 600 cm2.
A) 10 cm
B) 12 cm
C) 20 cm
D) 5 cm

31. A milk tank is in the form of cylinder whose radius is 1.5 m and length are 7 m. Find the quantity of milk in liters that can be stored in the tank?
A) 6500 L
B) 49501 L
C) 49549 L
D) 49500 L

32. A cuboid is of dimensions 60 cm × 54 cm × 30 cm. How many small cubes with side 6 cm can be placed in the given cuboid?
A) 450
B) 455
C) 350
D) 355

33. Find the angle measure x in the following figures.



A) 60°
B) 40°
C) 30°
D) 50°

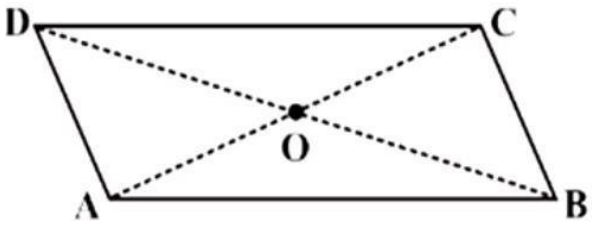
34. How many diagonals does a convex quadrilateral have?

A) 2
B) 9
C) 0
D) 1

35. How many sides does a regular polygon have if the measure of an exterior angle is 24°?

A) 20
B) 12
C) 15
D) 10

36. Given a parallelogram ABCD. Complete statement along with the definition or property used.



AD = _____

A) AC
B) BC
C) BD
D) OA

37. Can a quadrilateral ABCD be a parallelogram if AB = DC = 8 cm, AD = 4 cm and BC = 4.4 cm?

A) Yes
B) No
C) May be
D) None of the above

38. Identify all the quadrilaterals that have, four sides of equal length

A) Rhombus; Square
B) Rhombus; Triangle
C) Square; Circle
D) Rhombus; Trapezium

39. State whether True or False.

(a) All rectangles are squares
(b) All rhombuses are parallelograms

A) (a) is True and (b) is False
B) (a) is False and (b) is True
C) Both are false
D) Both are True

40. Two adjacent angles of a parallelogram have equal measure. Find the measure of each of the angles of the parallelogram.

A) Each is acute angled
B) Each is Right angled
C) One of the angle is obtuse
D) One of the angle is acute

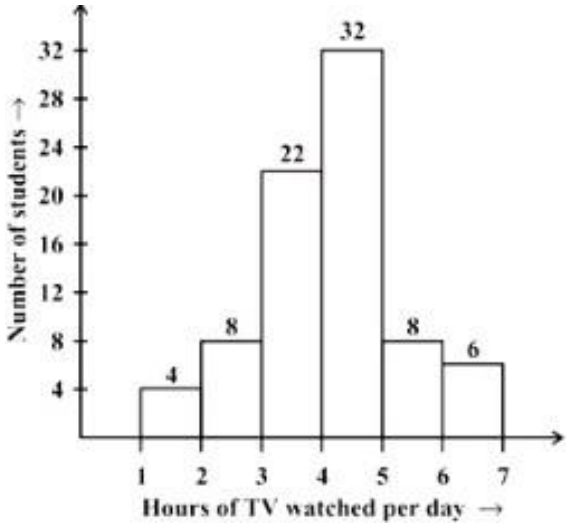
41. What is the sum of the measures of the angles of a convex quadrilateral?
    A) 250°
    B) 360°
    C) 150°
    D) 270°

42. State the name of a regular polygon of 6 sides.
    A) Square
    B) Trapezium
    C) Regular hexagon
    D) Equilateral triangle

43. For which of these would you use a histogram to show the data?
    (a) The number of letters for different areas in a postman's bag.
    (b) The height of competitors in an athletics meet.
    (c) The number of cassettes produced by 5 companies.
    (d) The number of passengers boarding trains from 7:00 a.m. to 7:00 p.m. at a station.

    A) a and b
    B) b and c
    C) b and d
    D) all of the above

44. The number of hours for which students of a particular class watched television during holidays is shown through the given graph.
    How many students spent more than 5 hours in watching TV?



A) 12
B) 16
C) 14
D) 8

45. A group of 360 people were asked to vote for their favourite season from the three seasons rainy, winter and summer. Which season got the most votes?

Season	No. of votes
Summer	90
Rainy	120
Winter	150

A) Winter
B) Summer
C) Rainy
D) All

46. Find the common factors of the given terms. 12 pq, $24p^2q^2$
A) 8pq
B) 14pq
C) 6pq
D) 10pq

47. Factorize the following expressions. 7x – 49
A) 7(x-7)
B) (7-x)
C) (6-x)7
D) (x-6)

48. Factorize 20xy – 10x + 4y – 8
A) (5x+1) (4y-2)
B) (3x+1) (5y-2)
C) x(6x-1)
D) NONE

49. A^2 + 8a + 16
A) $(a-4)^2$
B) $(a+4)^2$
C) (a^2+4)
D) $(4-a^2)$

50. Factorise (lm + l) -m -1
A) (l+1) (m+1)
B) (l-1) (m+1)
C) (m-2) (l-2)
D) (m+2) (l+2)

51. Carry out the following divisions. $28x^4 \div 56x$
A) $\frac{x}{2}$

B) $\frac{x^2}{4}$

C) $\frac{x^3}{2}$

D) None

52. Factorise the expressions and divide them as directed.

$(m^2 - 14m - 32) \div (m + 2)$

A) m-16

B) m+14

C) m-12

D) m+16

53. Suppose 2 kg of sugar contains 9×10^6 crystals. How many sugar crystals are there in 5 kg of sugar?

A) $2.7 \text{ X } 10^{14}$ crystals

B) $2.5 \text{ X } 10^5$ crystals

C) $2.25 \text{ X } 10^7$ crystals

D) $5.0 \text{ X } 10^7$ crystals

54. Catherine has a road map with a scale of 1 cm representing 22 km. She drives on a road for 88 km. What would be her distance covered in the map?

A) 2 cm

B) 6 cm

C) 10 cm

D) 4 cm

55. A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 6 hours?

A) 201 km

B) 202 km

C) 200 km

D) 177 km

56. If a box of sweets is divided among 24 children, they will get 5 sweets each. How many would each get, if the number of the children is increased by 6?

A) 6

B) 7
C) 8
D) 4

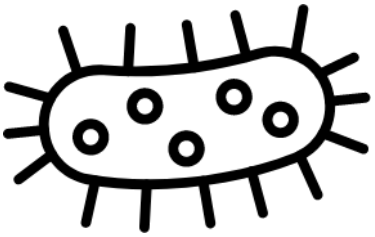
57. Two persons could fit new windows in a house in 3 days. One of the persons fell ill before the work started. How long would the job take now?
    A) 12 days
    B) 7 days
    C) 5 days
    D) 6 days

58. A school has 6 periods a day each of 45 minutes' duration. How long would each period be, if the school has 10 periods a day, assuming the number of school hours to be the same?
    A) 25 minutes
    B) 27 minutes
    C) 41 minutes
    D) 26 minutes

59. A car takes 2 hours to reach a destination by travelling at the speed of 60 km/h. How long will it take when the car travels at the speed of 100 km/h?
    A) $2\frac{1}{2} hours$
    B) $\frac{1}{2} hour$
    C) $1\frac{1}{2} hour$
    D) 1.2 $hours$

60. A 5 m 60 cm high vertical pole casts a shadow 3 m 20 cm long. Find at the same time the length of the shadow cast by another pole 10 m 50 cm high.
    A) 5m
    B) 6m
    C) 7m
    D) 3m

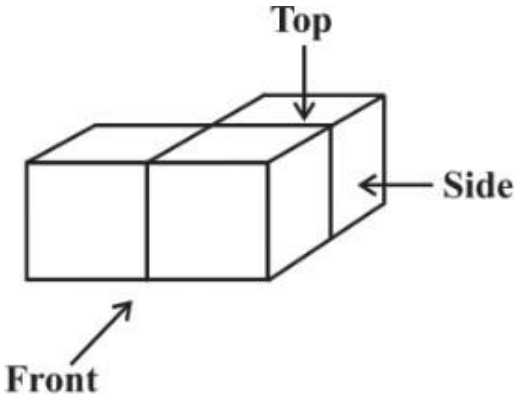
61. A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm as shown in the diagram. What is the actual length of the bacteria?

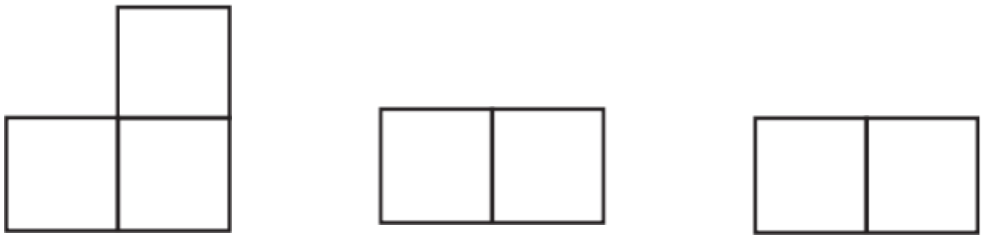


A) 10^{-2}cm
B) 10^{-3}cm
C) 10^{-4}cm
D) 10^{4}cm

62. A machine in a soft drink factory fills 900 bottles in six hours. How many bottles will it fill in five hours?
A) 700 bottles
B) 500 bottles
C) 750 bottles
D) 450 bottles

63. For each given solid, identify the top view, front view and side view.

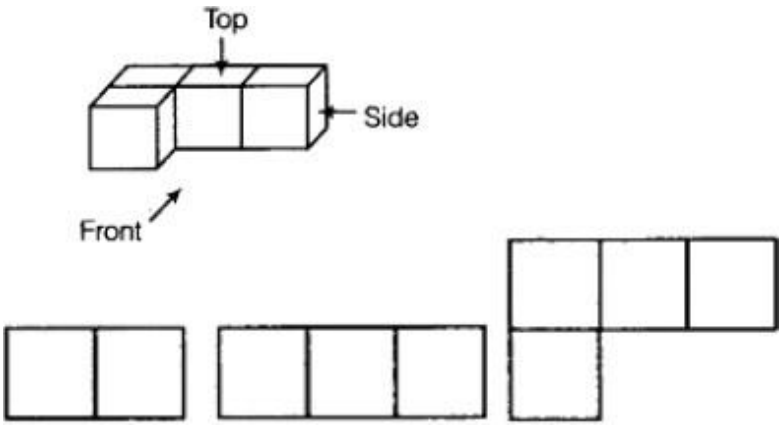




(a) (b) (c)

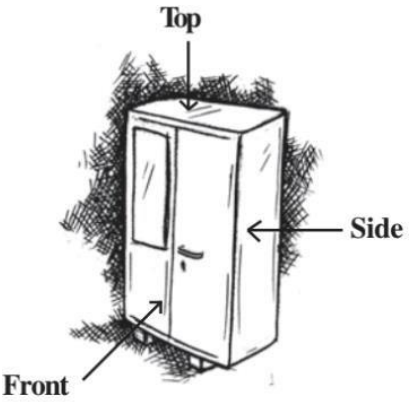
A) Front, side, top
B) Front, top, side
C) Top, front, side
D) Top, top, side

64.



A) Side, front, top
B) Front, top, side
C) Side, top, front
D) Top, front, side

65. For each of the given solid, the three views are given. Identify for each solid the corresponding top, front and side views.



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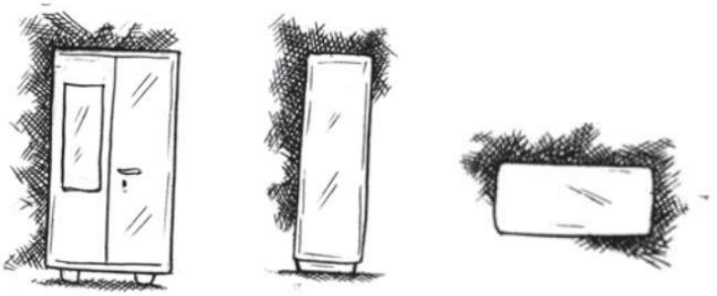

A) Side, top, front
B) Top, side, front
C) Front, side, top
D) Front, top, side

67. Find the following.

$$\frac{3}{7} + \left(\frac{-4}{14}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{7}\right)$$

a) $\left(\frac{-15}{21}\right)$
b) $\left(\frac{-10}{21}\right)$
c) $\left(\frac{15}{21}\right)$
d) $\left(\frac{10}{21}\right)$

68. A number which can be written in the form $\left(\frac{m}{n}\right)$ where m and n are integers and n ≠ 0 is known as _____

a) Integer
b) Real number
c) Rational number
d) Whole number

69. The product of two rational numbers is always a_____.

a) Integer
b) Real number
c) Rational number
d) Whole number

70. When we multiply a rational number with 1 we get same number.

a) True
b) False
c) Partially true
d) Partially false

71. What is the multiplicative inverse of $\frac{1}{2}$ (infinity)

a) $\frac{1}{1}$
b) $\frac{2}{1}$
c) $\frac{0}{0}$
d) 2

72. What should be subtracted from $(\frac{3}{4} + \frac{2}{3})$ to get $-\frac{1}{12}$

a) $\frac{1}{4}$
b) $\frac{1}{3}$
c) $\frac{4}{1}$
d) $\frac{3}{2}$

73. The numbers 7 and -7 are their own_____.

a) Reciprocals

b) Real numbers
c) Multiplicative inverse
d) Additive inverse

74. A rational number is always a whole number.

a) True
b) False
c) Partially true
d) Partially false

75. _____are the numbers without fractions and it is a collection of positive integers and zero. It is represented by the symbol “W”

a) Whole number
b) Natural number
c) Even number
d) Real number

76. All the integers are rational numbers.

a) True
b) False
c) Partially true
d) Partially false

77. Two numbers are in the ratio 6:7. If the sum of the numbers is 130, find the numbers.

a) 50, 60
b) 55, 65
c) 60, 70
d) 65, 75

78. Half of a herd of deer is grazing in the field and one thirds of the remaining are playing nearby. The rest 12 are drinking water from the pond. Find the number of deer in the herd.

a) 81
b) 27
c) 36
d) 72

79. The root of 18x + 12 = 66.

a) 4
b) 3
c) 6
d) 2

80. If you subtract from a number and multiply the result with twice the initial number, you get the result 8. What is the number?

a) 2
b) 4
c) 8
d) 12

81. Find the value of x for the equation 3x – 8 = 28.

a) 12
b) 14
c) 16
d) 18

82. Find the number, if 45 is added to three times of the number results in 120.

a) 15
b) 25
c) 45
d) 30

83. Solve the given linear equation:17 + 6p

=28.a) P= 17/11

b) P=11/17
c) P=11/6
d) P=9/11

84. Find the two numbers, if the numbers are in the ratio 3:7 and they differ by 60

a) 105,45
b) 65, 91
c) 45,105
d) 60, 84

85. $6(4x + 2) – 5(7x – 1) = 2(x – 8) – 5(7x – 6) + 8x$

a) X= -3/14
b) X= -6/14
c) X= -3/13
d) X= -6/13

86. $0.2[5x – (9/2)] = 0.5x + 0.6$

a) X= 3.2
b) X= 2.3
c) X= 3.0
d) X= 12.32

87. What is the smallest number by which 675 may be divided so that the quotient is a perfect cube?

a) 25
b) 15
c) 35
d) 17

88. Three numbers are in the ratio 4: 6: 8. Sum of their cubes is 33957, then the numbers are_____

a) 14, 21, 28
b) 15, 22, 29
c) 13, 20, 27
d) none of these

89. The volume of a cube is 24389000 m^3. Find the side of the cube.

a) 290 m
b) 220 m
c) 210 m
d) 240 m

90. Cube root of 175996 is_____?

a) 65
b) 56
c) 76
d) none of these

91. Which of the following are cubes of even natural numbers?

a) 13823
b) 21952
c) 456533
d) 1728

92. One's digit of the cube of 97336 will be

a) 2

b) 4
c) 6
d) none of these

93. Find the cube root of 1000000000

(a) 100
(b) 1000
(c) 10000
(d) None of these

94. Find the cube root of each of 250 x 42592

a) 130
b) 230
c) 110
d) 220

95. Find the cube root of 13824 / 46656

a) 12 / 13
b) 22 / 23
c) 24 / 36
d) 42 / 43

96 Which of the following is a cube of odd natural numbers?

a) 13824
b) 50653
c) 46656
d) 512

97. Which of the following numbers is a perfect square?

(a) 141

(b) 196

(c) 577

(d) 222

98. Find the square root of 6084.

(a) 48

(b) 78

(c) 98

(d) 68

99. 3025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

a) 55
b) 45
c) 65
d) 25

100. A school collected $3844 as fees from its students. If each student paid, as many bucks as there were students in the school, how many students were there in the school?

a) 58
b) 62
c) 66
d) 48

101. Find the smallest number by which 3645 should be divided so as to get a perfect square.

a) 4
b) 6
c) 5
d) 3

102. Simplify: $(\sqrt{81}+\sqrt{0.81}+\sqrt{0.0081})\times\sqrt{10000})$

(a) 999
(b) 666
(c) 6666
(d) 9999

103. Find the smallest number by which 1152 must be multiplied so that it becomes a perfect square.

(a) 2
(b) 6
(c) 3
(d) 5

104. Find the value of the following without calculating squares, $120^2 - 118^2$

(a) 445
(b) 235
(c) 476
(d) 435

105. What is the least number that must be subtracted from 3793 so as to get a perfect square?

(a) 61
(b) 72
(c) 55
(d) 32

106. Evaluate $1^3 + 5^3 + 3^3 + 4^3 + 3^3 = ?$

(a) 237
(b) 244
(c) 243
(d) 251

107. Any algebraic expression, which has one or more terms is called a _____.

(a) Polynomial
(b) Binomial
(c) Monomial
(d) None of these

108. Find the areas of rectangle with the following monomials as their lengths and breadths respectively :(5mn, 8np)

(a) $39mn^2p$.
(b) $40mn^2p$.
(c) $12m^2np$.
(d) $13m^2np$

109. Find the product: $(5xy - 5)^2$

(a) $9x^2y^2 - 30xy + 25$
(b) $25x^2y^2 - 50xy + 25$
(c) $28x^2y^2 - 32xy + 48$
(d) $69x^2y^2 - 52xy + 25$

110. The area of a rectangle is 'xy' where x is length and 'y' is breadth. If the length of rectangle is increased by 5 units and breadth is decreased by 5 units, the new area of rectangle will be:

(a) $(x - y)(x + 3)$

(b) xy + 15
(c) (y - 5)(x + 5)
(d) xy + 5 – 3

111. Add: $-3a^2b^2$, $-52\ a^2b^2$, $4a^2b^2$, $23\ a^2b^2$

(a) $28\ a^2b^2$

(b) $(-4/5)\ a^2b^2$

(c) $(4/5)\ a^2b^2$

(d) $-28\ a^2b^2$

112. Subtract: $3x^3 – 5x + 7$ from $5x^3 – 7x + 9$

(a) $2x^3 - 2x + 2$
(b) $4x^3 – 4x + 18$
(c) $6x^3 – 5x + 17$
(d) $7x^3 – 6x + 12$

113. If 21y5 is a multiple of 9, where y is a digit, what is the value of y?

A). 0
B). 1
C). 2
D). 3

114. If 31z5 is a multiple of 3, where z is a digit, what might be the values of z?

A). 0,1,2 or 3
B). 0,2,4 or 6
C). 0,3,6 or 9
D). 0,2,5 or 8

115. A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. How much sheet of metal is required?

A). 440 m^2

B). 540 m^2
C). 440 cm^2
D). None of these

116. 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 length is 1 m.

A). 198 sq m
B). 1980 sq cm
C). 198 sq cm
D). 1980 sq m

117. Water is pouring into a cuboidal reservoir at the rate of 60 litres per minute. If the volume of reservoir is 108 m^3 , find the number of hours it will take to fill the reservoir.

A). 30 hours
B). 3 hours
C). 80 hours
D). None of these

118. Simplify (a + b) (c – d) + (a – b) (c + d) + 2 (ac + bd)

A) 2ac
B) 3ac
C) 4ac+2bd
D) 5ac

119. Using (x + a) (x + b) = x^2+ (a + b) x + ab, find 103 × 98

A). 48315
B). 10094
C). 41616

D). 10904

120. A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?

A). 22
B). 23
C). 24
D). 25

121. If 60% people in a city like cricket, 30% like football and the remaining like other games, then what per cent of the people like other games?

A). 10 percent
B). 15 percent
C). 20 percent
D). None of these

122. On Sunday 845 people went to the Zoo. On Monday only 169 people went. What is the per cent decrease in the people visiting the Zoo on Monday?

A). 50%
B). 60%
C). 80%
D). None of these

123. Maria invested $8,000 in a business. She would be paid interest at 5% per annum compounded annually. Find interest for the 3rd year.

A). $440
B). $356

C). $542
D). $441

124. A contractor estimates that 3 persons could rewire Jassy's house in 4 days. If, he uses 4 persons instead of three, how long should they take to complete the job?

A). 2 days
B). 3 days
C). 4 days
D). 5 days

125. If a box of sweets is divided among 24 children, they will get 5 sweets each. How many would each get, if the number of the children is reduced by 4?

A). 3 sweets
B). 6 sweets
C). 9 sweets
D). 12 sweets

ANSWER KEY

QUESTION NO.	ANSWER
1	B
2	C
3	B
4	A
5	A
6	C
7	B
8	D
9	A
10	D
11	D
12	A
13	A
14	A
15	A
16	A
17	A
18	C
19	C
20	D
21	A
22	A
23	C
24	D
25	A
26	D
27	B
28	B
29	A
30	A
31	D
32	A
33	A
34	A
35	C
36	B
37	B
38	B
39	B
40	B

QUESTION NO.	ANSWER
41	B
42	C
43	C
44	C
45	A
46	C
47	A
48	D
49	B
50	B
51	C
52	C
53	D
54	A
55	D
56	D
57	D
58	B
59	D
60	B
61	C
62	C
63	C
64	A
65	C
66	D
67	C
68	C
69	C
70	A
71	B
72	D
73	D
74	B
75	A
76	A
77	C
78	D
79	B
80	B

• ANSWER KEY

QUESTION NO.	ANSWER
81	A
82	B
83	C
84	C
85	C
86	C
87	A
88	A
89	A
90	B
91	D
92	C
93	D
94	D
95	C
96	B
97	B
98	B
99	A
100	B
101	C
102	A
103	B
104	C
105	B
106	B
107	A
108	B
109	B
110	C
111	D
112	A
113	B
114	C
115	A
116	D
117	A
118	C
119	B
120	D

QUESTION NO.	ANSWER
121	A
122	C
123	D
124	B
125	B