

class - IX Solutions

Q1.

Answers key.

Solu: (C)

(i) $\rightarrow \sqrt{16}$ \rightarrow 4 is a rational

(ii) $\rightarrow \sqrt{\frac{12}{3}}$ $\rightarrow \sqrt{4}$ \rightarrow 2 is a rational

(iii) $\rightarrow \sqrt{12}$ $\rightarrow \sqrt{12}$ is a irrational

(iv) $\rightarrow \sqrt{100}$ \rightarrow 10 is a rational.

Q2. (C)

Solu: $x = 7 + 4\sqrt{3}$, $xy = 1$

$$\frac{1}{x} = \frac{1}{7+4\sqrt{3}} \times \frac{7-4\sqrt{3}}{7-4\sqrt{3}} \rightarrow \frac{7-4\sqrt{3}}{}$$

$$\frac{1}{x^2} + \frac{1}{y^2} \rightarrow \frac{1}{(7+4\sqrt{3})^2} + \frac{1}{(7-4\sqrt{3})^2}$$

$$\rightarrow \frac{(7-4\sqrt{3})^2 + (7+4\sqrt{3})^2}{}$$

$$\rightarrow 49 + 48 - 56\sqrt{3} + 49 + 48 + 56\sqrt{3}$$

$$\rightarrow 194 \text{ ans}$$

Q3 (B)

Solu: Irrational no \rightarrow 0.2 is a rational
0.2222... is rational

Q4. (B)

Solu:- $\left(\frac{a^m}{a^y}\right)^{x+y} \times \left(\frac{a^y}{a^z}\right)^{y+z} \times \left(\frac{a^z}{a^x}\right)^{z+x}$

2) $\frac{a^{m^2+xy}}{a^{my+y^2}} \times \frac{a^{y^2+yz}}{a^{yz+z^2}} \times \frac{a^{z^2+xz}}{a^{xz+x^2}}$

$\left[\because \frac{a^m}{a^n} = a^{m-n} \right] \left[\because a^m \times a^n = a^{m+n} \right]$

2) $a^{m^2+xy-xy-y^2} \times a^{y^2+z^2+yz-yz} \times a^{z^2+x^2-xz+xz}$

2) $a^{m^2-y^2+y^2+z^2-z^2+x^2}$

2) $a^0 = 1$ any

Q5. (D)

Solu:- Given, $0 < y < x$

(i) $\sqrt{x} - \sqrt{y} = \sqrt{x-y}$ it is false

(ii) $\sqrt{x} + \sqrt{x} = 2\sqrt{x}$ it is false

(iii) $x\sqrt{y} = y\sqrt{x}$

(iv) $\sqrt{xy} = \sqrt{x} \times \sqrt{y}$ it is true.

Q6 (D)

Solu:- $x^2 + kx + 6 = (x+2)(x+3)$

2) $x^2 + kx + 6 = x^2 + 3x + 2x + 6$

2) ~~$x^2 + kx + 6 = x^2 + 5x + 6$~~

2) $kx = 5x$ 2) $k = 5$

Q7. (B)

Soln: $(3)^3 + (5)^3 - (8)^3$

2) $27 + 125 - 512$

2) -360 ans

$$\begin{array}{r} 1 \\ 152 \\ \underline{512} \\ 664 \end{array}$$

Q8 (C)

Soln: $(x+y)^2 = (3)^2$

2) $x^2 + y^2 + 2xy = 9$

2) $5 + 2xy = 9$

2) $2xy = 9 - 5$

2) $2xy = \frac{4}{9}$ 2) $xy = \frac{2}{9}$

Q9 (A)

Soln: given :- $x^2 + 2x = 45$

2) $x^2 + 2x - 45 = 0$

2) $x^2 + 47x -$

Through algebraic calculation
the answer is ~~2012~~ 2012

$$(x^2 + 2x)^2 = (45)^2$$

$$x^4 + 4x^2 + 4x^3 = 2025$$

$$x^4 + 4x^2 + 4x^3 - 13 = 2025 - 13$$

$$= \sqrt{2012}$$

10 (C)

Soln given :- $x = 2\sqrt{2} + \sqrt{7}$

2) $x = 2\sqrt{2} + \sqrt{7}$, $\frac{1}{x} = \frac{1}{2\sqrt{2} + \sqrt{7}}$

2) $\frac{1}{x} = \frac{1}{2\sqrt{2} + \sqrt{7}} \times \frac{2\sqrt{2} - \sqrt{7}}{2\sqrt{2} - \sqrt{7}}$

2) $\frac{1}{x} = \frac{2\sqrt{2} - \sqrt{7}}{8 - 7}$ 2) $\frac{1}{x} = 2\sqrt{2} - \sqrt{7}$

2) $\frac{1}{x} \left(x + \frac{1}{x} \right)$

2) $\frac{1}{x} (2 + 2\sqrt{2} + \sqrt{7} + 2\sqrt{2} - \sqrt{7})$

2) $\frac{1}{x} \times 4\sqrt{2}$ 2) $2\sqrt{2}$ any

Q11 (A)

Soln - $x - \frac{1}{x} = 9$ (given)

2) $\left(x - \frac{1}{x} \right)^2 = 9^2$

2) $x^2 + \frac{1}{x^2} - 2(x) \left(\frac{1}{x} \right) = 81$

2) $x^2 + \frac{1}{x^2} = 81 + 2$

2) $x^2 + \frac{1}{x^2} = 83$

Q12. (B)

Let, $n=2$

$$2) \frac{x^2 - y^2}{x+y} = \frac{(x+y)(x-y)}{(x+y)}$$

2) only. It shows that $x^n - y^n$ is divisible by $x+y$ if and only if n is a positive even integer.

Q13. (D)

Solut- Given :- $x^{51} + 51$ is divided by $(x+1)$

$$2) x+1 = 0$$

$$2) x = -1$$

$$2) -1^{51} + 51$$

$$2) -1 + 51 \quad 2) \boxed{50}$$

Q14 (C)

Solut- given :- $x + \sqrt{x^2 + 1}$ is a polynomial.

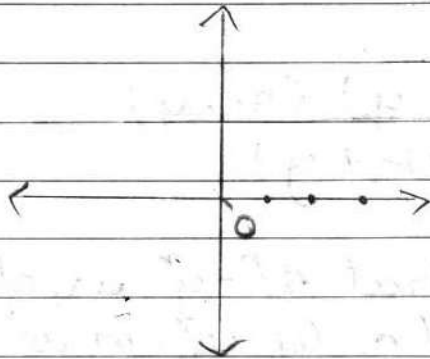
$$\textcircled{x + (x^2 + 1)^{1/2}}$$

highest power.

So, degree is 1 (linear polynomial)

Q15 (D)

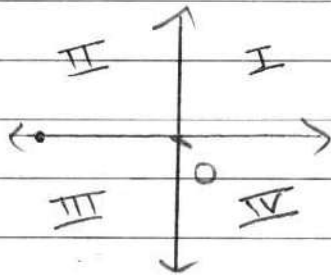
Solu:-



So, abscissa of all point is any number whereas, ordinate is 0.

Q16 (C)

Solu:-



on the negative direction of the x-axis.

Q17 (B)

Solu:- $y = a$

Q18 (C)

Solu:- meeting place of two walls.

Q19 (C)

Solu:- (3, 5)

Q20 (D)

Solu:- given:- $x - 2y - 6 = 0$

2) $x - 2y = 6$

2) (i) we put the value of (x, y) as $(2, 4)$

2) $2 - 2(4) = 6$

2) $2 - 8 \neq 6$

2) (ii) we put the value of (x, y) as $(0, 3)$

2) $0 - 2(3) = 6$

2) $0 - 6 \neq 6$

(iii) we put the value of (x, y) as $(-4, 1)$

2) $-4 - 2(1) = 6$

2) $-4 - 2 \neq 6$

(iv) we put the value of (x, y) as $(4, -1)$

2) $4 - 2(-1) = 6$

2) $4 + 2 = 6$

2) $6 = 6$

21 (A)

Solu: given $x=3$, $y=2$

put the value in equation

$$2) 3x - ky = 5$$

$$2) 3(3) - k(2) = 5$$

$$2) 9 - 2k = 5$$

$$2) -2k = 5 - 9$$

$$2) -2k = -4$$

$$2) k = \frac{-4}{-2}$$

$$2) \boxed{k = 2}$$

22

Solu:- (D)

$$a \neq 0, b \neq 0$$

because, if they are 0 so $ax+by+c=0$ is not represents the value of linear equation in two variable.

Q23 (D)

Solu:- $x+y = 2013$, $\frac{1}{x} + \frac{1}{y} = 2013$

2) $\frac{x+y}{xy} = 2013$

2) $\frac{2013}{xy} = 2013$

2) $\frac{1}{xy} = 1$

2) $xy = 1$

Q24 (A)

Solu:- Natural numbers.

Q25 (D)

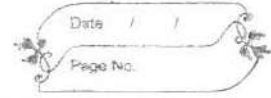
Solu:- Area of bottom side of cuboid is $= l \times b$
 Area of side $= b \times h = bh$
 Area of front side $= l \times h = lh$

2) Product of these areas =
 $l \times b \times b \times h \times h \times l$ 2) $l^2 b^2 h^2$

2) $(lbh)^2 = (\text{volume of cuboid})^2$

Hence, Product of these areas equal of the volume's square of volume.

Answerkey with class-9th
Solution



Q26 (C)
related to first chapter.

Topic :- Interchange temperature scale.

Q27 ans :- Bonus.

Q28 (D)
related to Third chapter.

Topic :- John Dalton's atomic theory.

Q29 (C)
related to chapter - 03

Topic :- Atomic size.

Q30 (C)

Solu:- In 20g hydrogen no. of moles of gas = 10

∴ At S.T.P. 1 mole gas
Volume = 22.4 L

∴ In 10 mole of
 H_2 gas = $22.4 \times 10 = 224 L$

Q31 (A)
related to chapter - 03

Topic :- Atomicity of molecules.

Q32. (D)
related to chapter - 03
Topic :- mass of an atom.

Q33. (A)
related to chapter - 05
Topic :- Types of cell.

Q34. (A)
related to chapter - 05
Topic :- Function of cell-organelles

Q35 (C)
related to chapter - 06
Topic :- Animal tissue.

Q36 (A)
related to chapter - 06
Topic :- Animal tissue.

Q37. (C)
related to chapter - 05.
Topic :- composition of a cell.

Q38 (D) Ans: D
related to chapter - 05

Topic:- Junction of cell membrane in cell.

Q39 (D) Ans:- D
not related to chapter - 05

Topic:- Main component of cell

Q40 (A)
related to chapter - 05

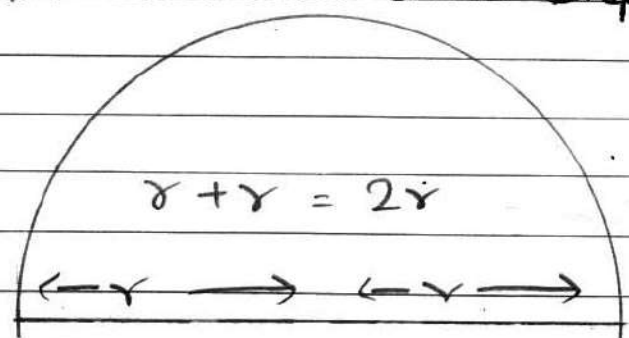
Topic:- classification of animal tissue.

Q41 (B)
related to chapter - 07

Topic:- Difference between vector and scalar.

Q42. (C)
related to chapter - 07

Topic:- Distance and Displacement.



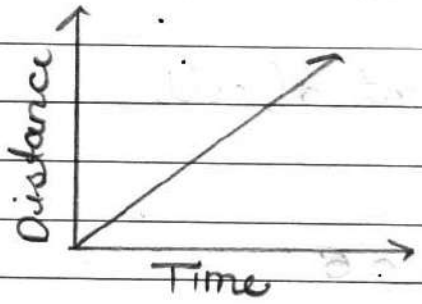
Q43 (D)

related to chapter - 07

Topic distance and displacement.

Q44 (A)

related to chapter - 07



uniform motion

Q45 (C)

$$\text{average speed} = \frac{\text{Total Distance}}{\text{Total Time}}$$

$$T_1 = \frac{24}{4} = 6 \text{ second}$$

$$T_2 = \frac{32}{8} = 4 \text{ second}$$

$$2) \frac{24+32}{6+4}$$

$$2) \frac{56}{10} \quad 2) 5.6 \text{ m/s}$$

Q46

(B)

related to chapter - 08

Topic :- Momentum and Force

Q47

(B)

related to chapter - 08

Topic :- Force

Soln :- $F = ma$

$$M = 500g = 0.5 \text{ kg}$$

$$a = \frac{F}{m} = \frac{1000}{0.5} \Rightarrow 2000 \text{ m/s}^2$$

Q48

(D)

related to chapter - 0

Topic :- Newton third law

Soln :-

Q49

(C)

related to chapter - 08

Topic :- Units of physical quantity

Q50 (A)

related to chapter - 07

Topic:- equation of motion

Solu:- $\because u = 0$

$$\text{From } S = ut + \frac{1}{2}at^2$$

$$2) S = 0 \times (10) + \frac{1}{2}(4)(10)^2$$

$$2) S = 0 + \frac{1}{2} \times 4 \times 100$$

$$2) S = 200 \text{ m}$$

Subject - English

Class - 9th

Answer Key

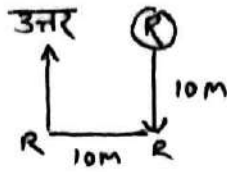
51. (c) haven't had ('yet' is an adverb of present perfect tense in negative meaning)
52. (A) usually works (due to an adverb of 'six days a week')
53. (c) were (due to conditional sentence/improbable condition)
54. (A) has been (due to an adverb of 'since 2010' which is showing present perfect continuous tense in this sentence)
55. (D) is (when two nouns are connected with 'preposition', verb is used according to the first subject)
56. (A) is (subject is in singular position/form)
57. (c) are (In this sentence 'there' is an introductory subject but after blank space, subject (noun) is in plural position/form)
58. (A) live (It's a blessing sentence)
59. (c) the ('highest' is the adjective of superlative degree)
60. (B) much (To express 'quantity of milk')
61. (c) A little (with uncountable noun in positive meaning or it means less amount)
62. (B) an (due to vowel sound)
63. (A) may (To express 'possibility')
64. (B) must not (for 'prohibition')
65. (D) could (due to 'ability of past')
66. (D) is running (due to an adverb of 'Look' which shows present continuous tense)
67. (D) has written (due to an adverb of 'so far' which expresses both senses (positive & Negative), most of time it expresses negative sense but in this sentence 'positive')
68. (A) must (for prohibition)

69. (C) the (When a proper noun is compared with another well renowned proper noun, that well renowned proper noun acts as a common noun and 'the' is used before it.)
70. (D) was caught (due to an adverb of 'yesterday' in passive voice)

CLASS- 9

91. A

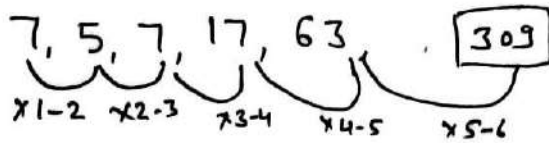
92. B



93. D

8, 28, 116, 584,

94. C

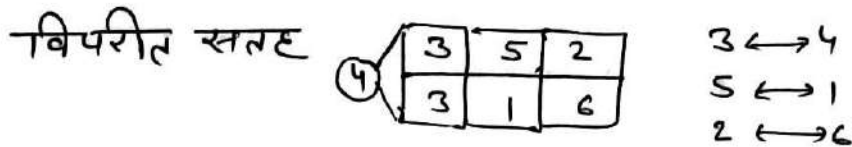


95. B.

∴ अन्दर प्रथम घण्टे में 8 मी. चलता है तथा अगले घण्टे में 4 मी. दिसता है
 ∴ कुल 2 घण्टे में 4 मी. ही चढ पाता है।
 ∴ 26 घण्टे में 52 मी. चढ पायेगा तथा 27 वें घण्टे में 8 मी. चढ जायेगा।

अतः मनु. 27 घण्टे होगा।

96. D.



97. B.

∴ चमगादड़ एक स्तनधारी प्राणी है,

98. D

∴ तालाब प्रति मिनट दुगुना भर जाता है जब 19 मिनट में पूरा भरेगा तो 20वें मिनट में पूरा भर जायेगा।

99. D

कुट में अक्षरों को अंग्रेजी वर्णमाला क्रम में लिखा गया है,

100. B.

अमन : रमन प्रश्नानुसार

$$\frac{3x+5}{x+5} = \frac{7}{3}$$

$$3x \quad x$$

$$\downarrow$$

$$10 वर्ष$$

$$9x+15 = 7x+35$$

$$2x = 20$$

$$x = 10$$