Himalaya International School

Subject – Mathematics

Class – VIII

Practice Assignment – 1

Chapter – Rational Numbers

Linear Equations in One Variable

Exponents and Powers

Playing with Numbers

Q.1 To get the product 1, we should multiply $\frac{8}{21}$ by:

    a) $\frac{8}{21}$ b) $-\frac{8}{21}$ c) $\frac{21}{8}$ d) $-\frac{21}{8}$

Q.2 If $\frac{2y+3}{3y-8} = \frac{3}{2}$, then the value of y is ___.

    a) 5   b) 6   c) -6   d) $\frac{1}{6}$

Q.3 The usual form of 679.57 X 10^4 is ___.

    a) 67957   b) 679570   c) 6795700   d) 67957000

Q.4 If p ÷ 2 leaves no remainder, the ones digit of p is ___.

    a) 3   b) 7   c) 9   d) 4

Q.5 Find the value of y for which 13y48 is divisible by 9.

Q.6 Simplify: $\frac{7}{8} + \frac{1}{16} - \frac{1}{12}$

Q.7 If AB X B = 96, find the value of A and B.

Q.8 Simplify: 5(x − 2) + (x − 3) = 2(2x + 1) − 9

Q.9 If 7251z39 is a multiple of 11, where z is a digit, what is the value of z?

Q.10 Write the number 67985 in expanded form using exponents.

Q.11 Find any five rational numbers between 2 and 3.

Q.12 Saumya thinks of a number and subtracts $\frac{5}{2}$ from it. She multiplies the result by 8. The result now obtained is 3 times the number she thought of. What number did Saumya think of?

Q.13 By what number should $(\frac{-5}{2})^{-3}$ be divided so that the quotient is $(\frac{25}{4})^{-2}$?

Q.14 Solve for m: $(-3)^{2m+1} \times (-3)^3 = (-3)^{12}$

Q.15 The sum of two rational numbers is $\frac{8}{25}$. If one of them is $\frac{3}{16}$, find the other.

Q.16 Find the value of the letters: 1AB + CCA = 697

Q.17 The pocket money with Ishan and Raghav are in the ratio 5:7. If the pocket money of both of them is increased by Rs 225, the new ratio will be 3:4. Find the pocket money they had.

Q.18 Simplify: $\dfrac{5^2 \times p^{-5}}{125 \times 10^{-2} \times p^{-6}}$

Q.19 The length of a rectangle exceeds its breadth by 9 cm. If the length and breadth are each increased by 3 cm, the area of the newly formed rectangle will be greater than the area of the original rectangle by 84 cm². Find the length and breadth of the rectangle.

Q.20 The table shows the portion of some common materials that are recycled.

Material	Recycled
Paper	$\dfrac{5}{11}$
Aluminium Cans	$\dfrac{5}{8}$
Glass	$\dfrac{2}{5}$
Scrap	$\dfrac{3}{4}$

Based on the above information, answer the following questions:

a) Is the rational number expressing the amount of paper recycled more than $\frac{1}{2}$ or less than $\frac{1}{2}$?

b) Which items have a recycled amount less than $\frac{1}{2}$?

c) Is the quantity of aluminium cans recycled more (or less) than half of the quantity of aluminium cans?

d) Arrange the rate of recycling the materials from the greatest to the smallest.

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Class – VIII

Practice Assignment – 2

Chapter – Understanding Quadrilaterals

Practical Geometry

Visualising Solid Shapes

Area of Polygons

Surface Areas and Volumes

Q.1 The Euler's formula is given by:

    a) E = V + F – 2   b) E + V = F – 2   c) V + F – E = 2   d) E + F = V – 2

Q.2 If the measure of an exterior angle is 24°, then number of sides of the polygon are ___ .

    a) 6   b) 9   c) 15   d) 12

Q.3 The sum of all the interior angles of a pentagon is _____ .

    a) 180°   b) 360°   c) 540°   d) 720°

Q.4 The solid with 6 faces, 6 vertices and 10 edges is a _____ .

    a) Pentagonal Pyramid   b) Pentagonal Prism   c) Hexagonal Pyramid
    d) Hexagonal Prism

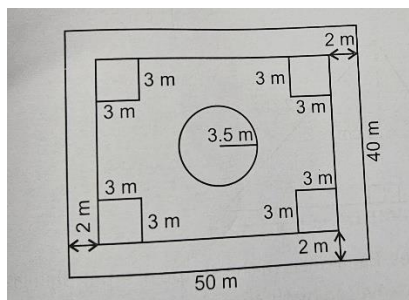**Q.5 1 mm³ equals to ____ cm³.**

    a) 0.001   b) 0.01   c) 0.1   d) 1000

Q.6 In a quadrilateral ABCD, the measure of the three angles A, B and C of the quadrilateral is 110°, 70° and 80°, respectively. Find the measure of the fourth angle.

Q.7 The floor of a room of area 43.2 m² is to be covered with tiles, which are in the shape of a parallelogram whose base is 18 cm and corresponding height is 8 cm. Find the cost of covering the floor if the cost of one tile is Rs 25.

Q.8 Construct a quadrilateral ABCD in which AB = 6 cm, BC = 4 cm, CD = 4 cm, ∠B = 95° and ∠C = 90°.

Q.9 Figure shows a park of length 50 m and breadth 40 m. There is a path of width 2 m all around inside the park, a circular pond of radius 3.5 m in the centre of the park, four square flower beds of side 3 m in the four corners and the remaining area is covered by grass.

Find:

a) the area covered by grass.

b) the cost of paving the path with cement at the rate of Rs 125 per m².

c) the cost of fencing the park with 5 rows of wire costing Rs 30 per m².

Q.10 Construct a Quadrilateral PLAN with PL = 4 cm, LA = 6.5 cm, ∠P = 90°, ∠A = 110° and ∠N = 85°.

Q.11 If the area of a rhombus is 60 cm² and one diagonal is 10 cm. Find the other diagonal.

Q.12 The opposite angles of a parallelogram are (3x + 5)° and (61 − x)°. Find the measure of four angles.

Q.13 Mr. Mehra wants to decorate the drawing room with wallpaper which costs Rs 125 per m². If the dimensions of Mr. Mehra's drawing room are 15m X 12m X 4m, find the cost of decorating the four walls.

Q.14 Construct a quadrilateral JUMP where JU = 3.5 cm, UM = 4 cm, MP = 5 cm, PJ = 4.5 cm and PU = 6.5 cm.

Q.15 The dimensions of a piece of iron in the shape of a cuboid are 270 cm X 100 cm X 64 cm. If the cuboid is melted and cast into cubes of side 12 cm, find the number of cubes obtained.
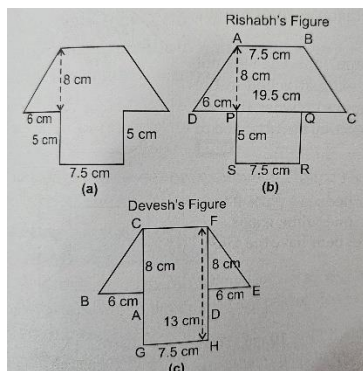
Q.16 Construct a quadrilateral PQRS where PQ = 6 cm, QR = 6 cm, RS = SP = 4.5 cm and ∠Q = 120°.

Q.17 A well is dug with 14 m diameter and a depth of 10 m. The earth taken out is spread evenly on a plot of land 100 m long and 7 m wide. Find the height of the platform thus formed by the earth.

Q.18 A particular brand of health drink is available in two sizes – a cuboidal pack with a square base of side 5 cm and height 14 cm, and a cylindrical pack of base radius 3.5 cm and height 12 cm. Which of them has greater capacity and by how much?

Q.19 A large hall has 25 pillars which are cylindrical in shape. The height of each pillar is 14 m and the radius of the base is 50 cm. These pillars are to be painted. If one can of paint covers 100 m², find the total number of cans of paint required.

Q.20 The students of a class were asked to find out the area of figure (a). For finding the area, Rishabh and Devesh divided the figure in two different ways as shown in figures (b) and (c). Find the area of the figure by both methods.

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Practice Assignment – 3

Chapter – Squares and Square Roots

Cubes and Cube Roots

Comparing Quantities

Direct and Inverse Proportions

Q.1 The number of non-perfect square numbers which lie between the squares of 91 and 92 is _____.

   a) 182   b) 91   c) 92   d) 184

Q.2 The cube root of 0.010648 is ___.

   a) 0.24   b) 22.2   c) 0.22   d) 2.2

Q.3 If the price of an article which is Rs 15,000 is reduced by 3 %, then the new price is _____.

   a) Rs 14,750   b) Rs 14,550   c) Rs 14,250   d) Rs 14,300

Q.4 If the cost of 12 books is Rs 450, then the cost price of 16 books is _____.

   a) Rs 500   b) Rs 615   c) Rs 560   d) Rs 600

Q.5 A batch of bottles is packed in 25 boxes with 12 bottles in each box. If the same batch is packed using 20 bottles in each box, how many boxes would be filled?

Q.6 Write a Pythagorean triplet whose one member is 6.

Q.7 Find the smallest number by which 33275 must be multiplied so that the product becomes a perfect cube.

Q.8 A shirt was sold for Rs 598.40 after allowing a discount of 12 % on its marked price. Determine the marked price of a shirt.

Q.9 If the weight of 6 sheets of paper is 162 g, how many sheets of the same paper would weigh 13.5 kg?

Q.10 In a hostel of 30 boys, there are food provisions for 40 days. If 10 more boys join the hostel, how long will these provisions last?

Q.11 The area of a square plot is $100\frac{601}{900}$ m². Find the length of one side of the plot.

Q.12 Simplify: $\sqrt[3]{3375 \ X \ (-1728)}$

Q.13 In what time will Rs 1500 amount to Rs 2205 at 5 % per annum?

Q.14 Find the greatest six-digit number which is a perfect square.

Q.15 Find the values of a and b in the following table, if x and y vary directly.

X	10	4	b
y	15	a	18

Q.16 A car takes 2 hours to reach a destination by travelling at a speed of 60 Km/hr. How long will it take when the car travels at a speed of 80 Km/hr?

Q.17 Hamid goes to a shop to buy a grinder costing Rs 2700. The rate of the VAT is 8%. He tells the shopkeeper to allow a discount on the price of the grinder to such an extent that he pays Rs 2700 inclusive of VAT. Find the discount on the price of the grinder.

Q.18 A newly built auditorium has a seating capacity of 841 people. The total number of seats along length and breadth are equal. The auditorium seats are divided into three sections. A central section and two side sections with an equal number of seats in each row on each side.

Based on the above information, answer the following questions:

a) To find the total number of seats including the three sections along length and breadth it is necessary to find:

i) Square of 841   ii) Square root of 841   iii) Cube root of 841   iv) Factors of 841 with 3 as one of the factors

b) Calculate the number of seats in each row (along breadth) and each column (along the length).

Q.19 A shopkeeper bought 100 watches and 100 fans each item costing Rs 4000. He sold each watch at a loss of 4 % and each fan at a gain of 6 %. Based on the above information, answer the following questions:

a) Find the SP of 100 watches.

b) Find the SP of 100 fans.

c) Find the total profit or loss.

d) Find his loss or gain percent on the whole transaction.

Q.20 Mani took a loan of Rs 1,60,000 from a finance company. If the rate of interest is 10% per annum, how much will she pay more if the interest is compounded half yearly instead of it being compounded yearly for 2 years?

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Practice Assignment – 4

Chapter – Data Handling

Introduction to Graphs

Algebraic Expressions and Identities

Factorisation

Q.1 Pictorial representation of data using symbols is known as:

    a) Bar graph   **b) Pictograph**   **c) Pie chart** **d) None of these**

Q.2 The value of $x^2 - 2x + 1$ when x = 1 is _____.

    a) 0   **b) 1**   **c) -1**   **d) 2**

Q.3 The class mark of the class 20-30 is _____.

    a) 20   **b) 30**   **c) 25**   **d) 10**

Q.4 Which of the following points lies on y-axis?

    a) (-4,0)   **b) (4,0)**   **c) (0,-4)**   **d) (-4,4)**

Q.5 Which of the following is the common factor of 5xy, 3pqr and 40xyz?

    a) 0   **b) xy**   **c) 1**   **d) 5**

Q.6 Factorise the following expression: 10ab + 4a + 5b + 2

Q.7 Multiply the following expressions:
a) $3xy^2 \times (-5x^2y)$
b) $\frac{1}{2}x^2yz \times 3\frac{2}{3}xy^2z \times \frac{1}{5}x^2yz$

Q.8 Simplify: $34x^3y^3z^3 \div 51xy^2z^3$

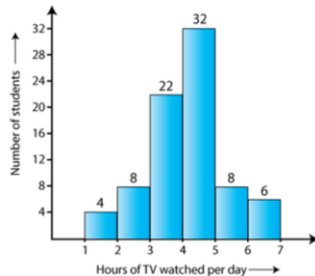**Q.9 Simplify: $a^2(b^2 - c^2) + b^2(c^2 - a^2) + c^2(a^2 - b^2)$**

Q.10 Draw a histogram for the following daily earnings of 40 daily wage workers.

Daily Earnings (in Rs)	150 - 200	200 - 250	250 - 300	300 - 350	350 - 400

Number of workers	4	12	15	7	2

Q.11 Divide: $20(y + 4) (y^2 + 5y + 3) \div 5(y + 4)$

Q.12 The number of hours the students of a particular class have watched television during holidays is shown in the graph given below. Answer the following questions:

a) How many hours did the maximum number of students watch T.V.?

b) How many students have watched T.V. for less than 4 hours?

c) How many students have spent more than 5 hours watching T.V.?

Q.13 Write the quadrants of the following coordinates:

a) (4,9)   b) (-3,-7)   c) (-3,4)   d) (6,-5)

Q.14 Factorise:

a) $x^2 + 12xy + 27y^2$

b) $4x^2 - 20x + 25$

c) $x^2 + 19x - 20$

Q.15 Verify that $(11pq + 4q)^2 - (11pq - 4q)^2 = 176pq^2$.

Q.16 Plot the following points on a graph paper. Verify whether they lie on a line?

(2,3), (4,6), (6,9)

Q.17 Find the value of $\dfrac{38^2 - 22^2}{16}$, **using a suitable identity.**

Q.18 The following table shows the number of articles and their cost in rupees. Represent the following by a linear graph.
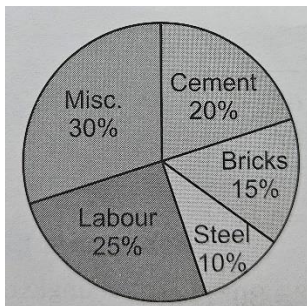
Number of Articles (x)	2	4	6	8

Cost Price in Rs (y)	150	300	450	600

From the graph, answer the following questions:

a) What will be the cost of 7 articles?

b) How many articles can be purchased on Rs 375?

Q.19 The pie chart gives the expenditure in percentage incurred in the construction of a house. Observe the pie chart and answer the following questions:

a) On which item is the expenditure maximum?

b) What is the central angle of the sector corresponding to expenditure on cement?

c) If the expenditure on bricks is Rs 81,000, what would be the expenditure on labour?

d) Expenditure on which item is double that of steel?

e) What is the total expenditure on the construction of the house?

Q.20 Ravi donated some amount for a charity show. When his friends asked about the donated amount, he said he has donated Rs $(x^2 + \frac{1}{x^2})$ and gave a hint along that $x + \frac{1}{x} = 75$.

Based on the above information, answer the following questions:

a) Name the mathematical concept acquired in this case.

b) Write the algebraic identity used to calculate the amount donated by Ravi.

c) Find the value of Rs $(x^2 + \frac{1}{x^2})$.