Miscellaneous Exercise 1

1. Choose the correct alternative answer for each of the following questions.

(1) In □ PQRS, $m\angle P = m\angle R = 108°$, $m\angle Q = m\angle S = 72°$. State which pair of sides of those given below is parallel.

(A) Side PQ and side QR (B) side PQ and side SR

(C) side SR and side SP (D) side PS and side PQ

(2) Read the following statements and choose the correct alternative from those given below them.

(i) Diagonals of a rectangle are perpendicular bisectors of each other.

(ii) Diagonals of a rhombus are perpendicular bisectors of each other.

(iii) Diagonals of a parallelogram are perpendicular bisectors of each other.

(iv) Diagonals of a kite bisect each other.

(A) Statement (ii) and (iii) are true (B) Only statement (ii) is true

(C) Statements (ii) and (iv) are true (D) Statements (i), (iii) and (iv) are true.

(3) If $19^3 = 6859$, find $\sqrt[3]{0.006859}$.

(A) 1.9 (B)19 (C) 0.019 (D)0.19

2. Find the cube roots of the following numbers.

(1) 5832 (2) 4096

3. $m \propto n$, $n = 15$ when $m = 25$. Hence

(1) Find m when $n = 87$ (2) Find n when $m = 155$

4. y varies inversely with x. If $y = 30$ when $x = 12$, find

(1) y when $x = 15$ (2) x when $y = 18$

5. Draw a line l. Draw a line parallel to line l at a distance of 3.5 cm.

6. Fill in the blanks in the following statement.

The number $(256)^{\frac{5}{7}}$ is ..... th root of ..... th power of ..... .

7. Expand.

(1) $(5x-7)(5x-9)$ (2) $(2x-3y)^3$ (3) $(a+\frac{1}{2})^3$

8. Draw an obtuse angled triangle. Draw all of its medians and show their point of concurrence.

9. Draw Δ ABC such that l (BC) = 5.5 cm, $m\angle$ABC = 90°, l (AB) = 4 cm. Show the orthocentre of the triangle.

10. Identify the variation and solve. It takes 5 hours to travel from one town to the other if speed of the bus is 48 km/hr. If the speed of the bus is reduced by 8 km/hr, how much time will it take for the same travel ?

11. Seg AD and seg BE are medians of Δ ABC and point G is the centroid. If l(AG) = 5 cm, find l(GD). If l(GE) = 2 cm, find l(BE).

12. Convert the following rational numbers into decimal form.

(1) $\frac{8}{13}$ (2) $\frac{11}{7}$ (3) $\frac{5}{16}$ (4) $\frac{7}{9}$

13. Factorise.

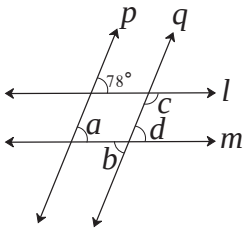
(1) $2y^2-11y+5$ (2) $x^2-2x-80$ (3) $3x^2-4x+1$

14. The marked price of a T. V. Set is ₹ 50000. The shop keeper sold it at 15% discount. Find the price of it for the customer.

15. Rajabhau sold his flat to Vasantrao for ₹ 88,00,000 through an agent. The agent charged 2 % commission for both of them. Find how much commission the agent got.

16. Draw a parallelogram ABCD. such that l(DC) = 5.5 cm, $m\angle$D = 45°, l(AD) = 4 cm.

17. In the figure, line l || line m and line p || line q. Find the measures of $\angle a$, $\angle b$, $\angle c$ and $\angle d$.



Answers

1. (i) B (ii) B (iii) D **2.** (1)18 (2) 16 **3.** (1) 145 (2) 93

4. (1) 24 (2) 20 **6.** 7, 5, 256 in order

7. (1) $25x^2-80x+63$ (2) $8x^3-36x^2y+54xy^2-27y^3$ (3) $a^3+\frac{3a^2}{2}+\frac{3a}{4}+\frac{1}{8}$

10. Inverse, 6 hrs **11.** l(GD) = 2.5 cm, l(BE)= 6 cm

12. (1) $0.\overline{615384}$ (2) $1.\overline{571428}$ (3) 0.3125 (4) $0.\dot{7}$

13. (1) $(y-5)(2y-1)$ (2) $(x-10)(x+8)$ (3) $(x-1)(3x-1)$

14. ₹ 42500 **15.** ₹ 352000 **17.** 78°, 78°, 102°, 78°