QUESTION BANK
CHAPTER: SQUARES AND SQUARE ROOT

SL.NO.	QUESTIONS	MARKS
1.	How many non-perfect square numbers are there in between 2500 and 51^2. [2022-23]	1
2.	Find $\sqrt{11025}$ by prime factorisation method. [2022-23]	2
3.	(a) Find the least number which must be added with 7581 to obtain a perfect square. Also find the square root of the number obtained. **OR** (b) Find the greatest four-digit number which is a perfect square. [2022-23]	3
4.	While arranging 335250 plants in a garden in such a way that each row contains as many plants as the number of rows, 9 were left over. What is the number of plants in the last row of the arrangement? Also find how many rows are there in the arrangement? [2022-23]	5
5.	Which of the following numbers is not a perfect square? [2023-24] A) 529 B) 961 C) 1024 D) 1222	1
6.	$\sqrt{72} \times \sqrt{98} = ?$ [2023-24] A) 42 B) 84 C) 64 D) 74	1
7.	Find the cube root of 729. [2023-24] A) 7 B) -9 C) 9 D) 11	1
8.	Find square root of 7744 by prime factorisation. **OR** Find square root of 169 by repeated subtraction method. [2023-24]	2
9.	Find the least number of that must be added to 15370 to make it a perfect square? Also, find the square root of the number so obtained. [2023-24]	3
10.	Find the square root of 2 correct to three places of decimal. [2023-24]	5
11.	How many non-square numbers lies between 100^2 and 101^2? (a) 100 (b) 150 (c) 200 (d) 250 [2024-25]	1
12.	Which of the following is a Pythagorean triplet? (a) (2,3,5) (b) (5,7,9) (c) (6,9,11) (d) (8,15,17) [2024-25]	1
13.	$\sqrt{0.9} \times \sqrt{1.6} = ?$ (a) 0.12 (b) 1.2 (c) 0.75 (d) 12 [2024-25]	1
14.	In a lecture hall, 8,649 students are sitting in such a manner that there are as many students in a row as there are rows in the lecture hall. How many students are there in each row of the lecture hall? **OR** Find the least number of six digits which is a perfect square. Find the square root of this number. [2024-25]	3

15	Which of them is a perfect square? a) 576 b)941 c)65 d)none	1
16	Which of the following is not a perfect square? a)62500 b)57600 c)90000 d)63147	1
17	Which of the following will have 4 at units place? a)14^2 b)62^2 c)27^2 d)35^2	1
18	By observing the digits at ones place ,tell which of the following can be perfect square a)100 b)927 c)625 d)576	1
19	If one number of the Pythagorean triplet is 2m then the other two are a)m, m^2+1 b)m^2+1,m^2-1 c)m^2,m^2+1 d)m , m^2	1
20	How many natural numbers lie between 5^2and6^2? a)9 b)10 c)11 d)12	1
21	Which of the following is the square root of 7056? a) 86 b) 34 c) 54 d) 84	1
22	Which of the following is the square root of 7056? a) 86 b) 34 c) 54 d) 84	1
23	Find the squares of the following numbers i)25 ii)30 iii)12	2
24	Find how many non-square number lie between the following pair of number i)100 and121 ii)$8^2$and 9^2 iii)30^2and31^2	3
25	Can a right triangle with sides 6cm, 8cm and 10cm be formed, give reason.	3
26	Find the square root of the following numbers by repeated subtraction metho i) 9 ii)121 iii)225 iv)196	4
27	Find the square root by prime factorisation i) 64 ii)289 iii)36 iv)1764	4
28	Find the smallest number by which 147 must be multiplied so that it becomes a perfect squar Also, find the square root of the number so obtained.	4
29	A PT teacher wants to arrange maximum possible number of 6000 students in a field such tha the number of rows is equal to the number of columns. Find the number of rows if 71 were le out after the arrangement.	4
30	Find the square root of the following by the long division method. i)12544 ii)97344 iii)18225	3+3+3=9
31	Find the least number which must be subtracted from the following number to make it perfe square i)2361 ii)18265	3+3=6
32	Find the least number which must be added from the following number to make it a perfect square i) 4931 ii)5607	3+3=6
33	Find the greatest number of 4 digits which is a perfect square. Find the square root of this number.	4

34	1225 plants are to be planted in such a way that each row contains as many plants as the number of rows. Find the number of plants in a row.	4
35	There are 500 children in a school. For a PT drill they have to stand in such a way that number of rows is equal to number of column. How many students are left out of the arrangement?	4
36	Find the square root of i) 324/841 ii) $4\frac{29}{29}$	3+2
37	Find the square root of the following numbers in decimal form i) 84.8241 ii) .00059049 iii)225.6004	3+3+3=9
38	Find the side of square whose area is equal to the area of rectangle with sides6.4m and 2.5	3
39	The area of square playground is 256.6404 square meter. Find the length of one side of the playground.	4
40	Find the length of side of square if the length of a diagonal is 10cm.	3
41	By what smallest number should 216 be divided so that quotient is perfect square. Also find th square root of quotient.	3
42	The product of two numbers is 1575 and their quotient is 9/7. Find the numbe	2
43	If $y = 5$, then the value of $10y\sqrt{y^3 - y^2}$ is : यदि $y = 5$ है, तो $10y\sqrt{y^3 - y^2}$ का मान है– (A) 2500 (B) 500 (C) $100\sqrt{5}$ (D) 50	1
44.	The area of a square field is 6084 m². A rectangular field, whose length is twice its breadth, has its perimeter equal to the perimeter of the square field. Find the area of rectangular field. एक वर्गाकार खेत का क्षेत्रफल 6084 m² है। एक आयताकार खेत की लंबाई उसकी चौड़ाई के दोगुना है। आयताकार खेत का परिमाप वर्गाकार खेत के परिमाप के बराबर है। आयताकार खेत का क्षेत्रफल ज्ञात कीजिए।	5
45.	Find the square root of $13\frac{1}{8}$ correct to two places of decimals. $13\frac{1}{8}$ का दशमलव के दो स्थानों तक सही वर्गमूल ज्ञात कीजिए।	5
46.	Two consecutive numbers are given by 'n' and '$n-1$'. The difference between their squares is दो क्रमागत संख्याएँ n और $n-1$ द्वारा दी गई हैं। उनके वर्गों के बीच का अंतर है– (A) $2n$ (B) $2n-1$ (C) $-1-2n$ (D) $2n+1$	1

| 47. | An army officer wishes to draw up his 36581 soldiers in the form of a square. After arranging them, he found that some of the soldiers are left out. How many soldiers are left out ? How many soldiers were arranged in the form of a square. Find the number of soldiers in each row.

एक सैनिक अधिकारी अपने 36581 सैनिकों को एक वर्ग के रूप में खड़ा करना चाहते है। उन्हें व्यवस्थित करने के बाद उन्होंने पाया कि कुछ सैनिक छूट गये हैं। कितने सैनिक छूट गए? कितने सैनिकों को एक वर्ग के रूप में व्यवस्थित किया गया ? प्रत्येक पंक्ति में सैनिकों की संख्या ज्ञात कीजिए। | 5 |
|---|---|---|
| 48. | Find the smallest 6 digit number which is a perfect square. Find the square root of this number.

6 अंकों की छोटी-से-छोटी संख्या ज्ञात कीजिए जो कि एक पूर्ण वर्ग हो। इस संख्या का वर्गमूल ज्ञात कीजिए। | 5 |

QUESTION BANK
CHAPTER: CUBES AND CUBE ROOTS

SL.NO.	QUESTIONS	MARKS
1.	Evaluate: $\sqrt[3]{(-125) \times (-216)}$. [2022-23]	1
2.	Write the greatest two-digit perfect cube number. [2022-23]	1
3.	(a) Find the smallest number by which 6750 be divided so that the quotient will be a perfect cube. OR (b) Find the smallest number by which 6125 must be multiplied to obtain a perfect cube. [2022-23]	2
4.	Evaluate: $\sqrt[3]{\dfrac{1.536}{1.029}}$ [2022-23]	2
5.	Find $\sqrt[3]{175616}$ by estimation. [2022-23]	3
6.	Find the smallest number by which 2560 must be multiplied so that the product is a perfect cube. [2023-24]	2
7.	Evaluate: $\sqrt[3]{3375 \times (-729)}$. OR Prove that if a number is tripled, then its cube is 27 times the cube of the given number. [2023-24]	2
8.	Find cube root of 15625 through estimation. [2023-24]	3
9.	$\sqrt[3]{0.027} - \sqrt[3]{0.008}$ is equal to (a) 1 (b) 0.1 (c) 0.11 (d) 0.09 [2024-25]	1
10.	Cube of 0.1 is equal to (a) 1.11 (b)0.001 (c)0.101 (d)0.01 [2024-25]	1
11.	Find the smallest number by which 2560 must be multiplied so that the product is a perfect cube. [2024-25]	2
12.	Find the cube root of (-2744) by prime factorization method. OR Find $\sqrt[3]{\dfrac{0.512}{0.343}}$ [2024-25]	2
13	Find the cube root of 15625 through estimation. [2024-25]	3
14	The cube of 11 is a)1331 b)3113 c)1313 d)3131	1
15	The number of zeros in the cube of 1000 a)2 b)4 c)9 d)10	1
16	The cube of (−21) is a)9261 b)−9261 c)−2961 d)−9216	1

17	The cube roots of 63x73 is a)216 b)—42 c)42 d)—216	1
18	The cube root of $\frac{-64}{125}$ is a)$\frac{8}{5}$ b) $-\frac{8}{5}$ c)$-\frac{4}{5}$ d)$\frac{4}{5}$	1
19	Given that $\sqrt[3]{x} = -6$ then x is a)216 b)18 c)—18 d)—216	1
20	Given that $512=8^3$, $3.375= 1.5^3$, find the value of $\sqrt[3]{512} \times \sqrt[3]{3.375}$ a)12 b)9.5 c)8 d)1.5	1
21	Write the cubes of all natural numbers between 1 and 20 and verify the following statements a) Cubes of all odd natural numbers are odd. b) Cubes of all even natural numbers are even.	2
22	Write cubes of 5 natural numbers which are multiples of 3 and verify the cube of natural number, which is multiple of 3 is multiple of 27.	3
23	Write cubes of 5 natural numbers of the form 3n+1(e.g. 4,7,10) and verify that the cube of natural number of the form 3n+1 is natural number of same form.	3
24	Which of the following are perfect cube i)1728 ii) 106480.	2
25	Which is the smallest number by which 392 must be multiplied so that the product is a perfect cube?	3
26	If one side of a cube is 13 metres, find its volume.	2
27	Find the cube roots i) 343 ii)1000 iii)2744 iv)74088 v)125	2+2+2+2 +2=10
28	Multiply 137592 by the smallest number so the product is a perfect cube and also find the cube root of product.	4
29	The volume of a cube is 343 cubic metres, find one side of cube.	3
30	Find the cube root of rational number i) —64/729 ii) — 343/—125	4
31	Divide the number 26244 by the smallest number so that quotient is a perfect cube. Also find the cube root of the quotient	4
32	The volume of cube 512 cubic metre. Find the length of the side of the cube.	3

33	Which of the following are cubes of a negative integer i)—64 ii)—2197 iii)—1056 iv)—3888.	3
34	Find the cube roots by prime factorisation i)125 ii)—5832 iii)—1728.	3
35	Find the cube roots of each of the following numbers i)8 X 64 ii)—216X 1728 iii)27X(—2744) iv) —125X—3375 v)—456533 vi)—5832000	2+2+2+2+2+2=12
36	Three numbers are in the ratio 1: 2:3. The sum of their cubes is 972. Find the numbers.	3
37	Difference in two perfect cubes is 189. If the cube root of smaller number is 3. Find the cube roots of the larger number.	3
38	Evaluate $\sqrt[3]{128\sqrt[3]{32\sqrt[3]{8}}}$	4
39.	The least possible value of 'k' to make $90 \times k$ a perfect cube, is : $90 \times k$ को पूर्ण घन बनाने के लिए k का न्यूनतम संभव मान है— (A) 8100 (B) 81 (C) 300 (D) 3	1
40.	Find the cube root of 175616 and use it to find the value of : $\sqrt[3]{175.616} + \sqrt[3]{0.175616}$ 175616 का घनमूल ज्ञात करें और इसका उपयोग $\sqrt[3]{175.616} - \sqrt[3]{0.175616}$ का मान ज्ञात करने के लिए करें।	3
41.	The value of $\sqrt[3]{0.125} - \sqrt[3]{0.064}$ is $\sqrt[3]{0.125} - \sqrt[3]{0.064}$ का मान है— (A) 0.001 (B) 0.46 (C) 0.009 (D) 0.1	1

42.	Read the conversation between Raghavi and Simmi :	2
	What do you think ? Is Simmi correct with her statement ? Justify your answer with an example.	

राघवी और सिम्मी के बीच बातचीत पढ़ें—

आप क्या सोचते हैं? क्या सिम्मी का कथन सही है। अपने उत्तर को उदाहरण सहित प्रमाणित करें।

Raghavi, राघवी

Do you agree that cube of a number is always greater than the number.

क्या आप इस बात से सहमत हैं कि किसी संख्या का घन सदैव उस संख्या से बड़ा होता है।

Simmi, सिम्मी

Oh yes, I do agree with you. Cube is always more.

ओह हाँ मैं आपसे सहमत हूँ। घन सदैव भड़ा होता है।

43.	Evaluate :	3

मूल्यांकन करें :

$$\frac{\sqrt[3]{2^3 \times 3^4} + \sqrt[3]{3 \times 7^3}}{\sqrt[3]{2^6 \times 3^4} + \sqrt[3]{3^7}}$$

QUESTION BANK
CHAPTER: ALGEBRAIC IDENTITIES

SI.NO.	QUESTIONS	MARKS
1.	Find the value of $(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})$ using suitable identity. [2022-23]	1
2.	(a) Factorise: $64x^2 - 81y^2$ OR (b) Evaluate $(19.9)^2$ using suitable identity. [2022-23]	2
3.	Find the product using suitable identities: $(x + \frac{1}{x})(x - \frac{1}{x})(x^2 + \frac{1}{x^2})(x^4 + \frac{1}{x^4})$. [2022-23]	3
4.	(a) Factorise the expression: $x^2 + y^2 + \frac{z^2}{4} + 2xy - yz - zx$. Hence verify for $x = \frac{1}{4}$, $y = \frac{1}{4}$ and $z = 1$. OR (b) If $x^2 + \frac{1}{x^2} = 27$, find the value of $\left(x - \frac{1}{x}\right)$ and $\left(x^4 + \frac{1}{x^4}\right)$. [2022-23]	5
5.	A side of the square with area $(4x^2 + 12x + 9)$ square units is A) $(4x + 3)$ units B) $(4x + 9)$ units C) $(2x + 3)$ units D) $(x + 3)$ units [2023-24]	1
6.	**Assertion(A):** If $x + \frac{1}{x} = 8$, value of $x^2 + \frac{1}{x^2}$ is 62 **Reason(R):** $(a + b)^2 = a^2 + b^2$ A) both A and R correct and R is correct explanation of A. B) both A and R correct but R is not correct explanation of A. C) A is true but R is false. D) A is false but R is true. [2023-24]	1
7.	Factorise: $x^2 + 2x - 24$ [2023-24]	2
8.	Factorise: $x^4 - 256$. [2023-24]	3
9.	Simplify: $\dfrac{2.3 \times 2.3 - 0.3 \times 0.3}{2.3 \times 2.3 - 2 \times 2.3 \times 0.3 + 0.3 \times 0.3}$. OR If $a - \frac{1}{a} = 5$, find the value of (i) $a^2 + \frac{1}{a^2}$. (ii) $a^4 + \frac{1}{a^4}$ [2023-24]	5
10.	$(x + 5)(x - 3) = ?$ [2024-25] (a) $x^2 + 5x - 15$ (b) $x^2 - 3x - 15$ (c) $x^2 + 2x - 15$ (d) $x^2 + 2x + 15$	1
11.	$\left(\frac{1}{x} + \frac{1}{y}\right)\left(\frac{1}{x} - \frac{1}{y}\right) = ?$ [2024-25] (a) $\left(\frac{1}{x^2} - \frac{1}{y^2}\right)$ (b) $\left(\frac{1}{x^2} + \frac{1}{y^2}\right)$ (c) $\left(\frac{1}{x^2} + \frac{1}{y^2} - \frac{1}{xy}\right)$ (d) $\left(\frac{1}{x^2} - \frac{1}{y^2} + \frac{1}{xy}\right)$	1
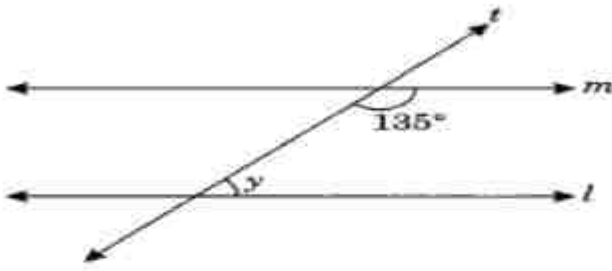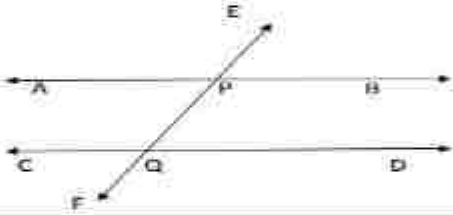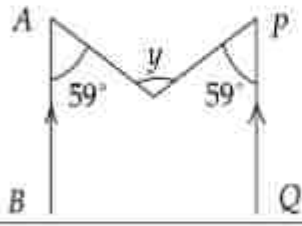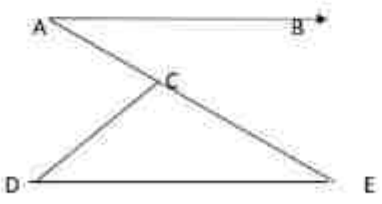
12.	**Assertion (A):** A side of a square with area $(4x^2 + 12x + 9)$ square units is $(2x + 3)$ units. **Reason (R):** $(a - b)^2 = a^2 - 2ab + b^2$ (a) Both Assertion (A) and Reason (R) are true and Reason is the correct explanation of Assertion(A). (b) Both Assertion (A) and Reason (R) are true but Reason is not the correct explanation of Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true [2024-25]	1
13.	Expand: $(-x + 6y + 4)^2$ **OR** If $x^2 + \dfrac{1}{x^2} = 51$, find the value of $x^2 - \dfrac{1}{x^2}$. [2024-25]	3
14.	If $a + \dfrac{1}{a} = \dfrac{17}{4}$, find the value of $\left(a - \dfrac{1}{a}\right)$. [2024-25]	5
15	A statement of equality which holds for all the values of a variable is known as a)identity b)exponent c)radical d)power	1
16	The process of writing a given algebraic expressions as product of 2 or more factors is known as a)identity b)factorization c)factor d)none of the above	1
17	Factorised form of $9x^2 + 30x + 25$ is a)$(3x+5)(x+5)$ b)$(3x+5)^2$ c)$(3x+5)(x-5)$ d)none	1
18	Factorised form of $a^2 - 7a + 12$ is a)$(a-3)(a-4)$ b)$(a-3)(a+4)$ c)$(a-3)^2$ d)$(a+4)^2$	1
19	One of the side of a rectangle having area $x^2+9x+18$ sq cm is $(x+3)$ then the other side is a)$(x+3)$ b)$(x+6)$ c)$(x+3)^2$ d)none	1
20	Find the following using identities i)$(2x+y)^2$ ii)$(2x+3y)^2$ iii)$(2x-3y)^2$ iv)$(6x-7y)^2$	4
21	Evaluate the following using identities i)$(102)^2$ ii)$(703)^2$ iii)$(992)^2$ iv)$(58)^2$ v)$(78)^2$ vi)$(1092)^2$	2+2+2+2 +2+2=12
22	Find the product using identities i)$(6x^2-7y^3)(6x^2+7y^3)$ ii)$(2a+3/b)(2a-3/b)$	4
23	Simplify the following products by expressing them as difference of 2 squares. i)68×72 ii)101×92 iii)67×73	3
24	Evaluate the following using identities i)$(82)^2-(18)^2$ ii)$(410)^2 - (390)^2$	2
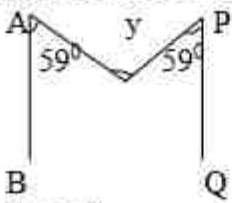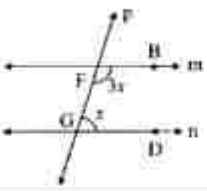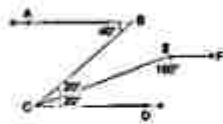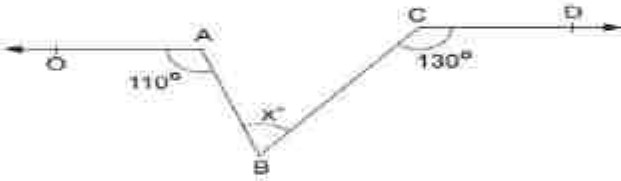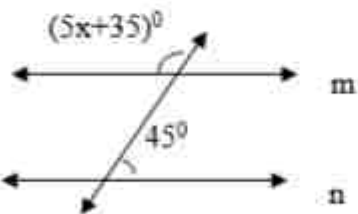
25	Expand the following i)$(4a-6b-3c)^2$ ii)$(2x-3y-5)^2$	4
26	Find the product by using suitable identity i)$(x+3)(x+6)$ ii)$(y-4)(y-12)$	2
27	Evaluate by using suitable identities i)95x 105 ii)1.8x2.2 iii)34x36	3
28	Evaluate the following products i)$(y^2+12)(y^2+6)$ ii)$(x^2+4)(x^2+9)$ iii)$(x+1/5)(x+5)$	2+2+2=6
29	Factorisation by using identities i)$49x^2-64y^2$ ii)$144a^2+192b^2+64b^2$ iii)$25x^2+9y^2-30xy$ iv)$4x^2+y^2+25z^2-4xy-10yz+20yz$ v)$121b^2-88bc-16c^2$	2+2+2+2+2=10
30	Factorise the given expression i)$x^2-5x-36$ ii)y^2-y-42 iii) x^2-2-35 iv)$x^2+7x-60$ v)$4y^2-12y+9$	3+3+3+3+3=15
31	Find the value of y^2+1/y^2, if y+1/y=12.	3
32	Factorise $(1+m)^2-4lm$	3
33	Factorise i)$25x^2-1-2y-y^2$ ii)$4a^2-(b-c^2)$	3+3=6
34	If x+1/x= 5then find the value of x^2+1/x^2.	3
35.	Square of the polynomial $(0.2x - 0.5y)$ is : बहुपद $(0.2x - 0.5y)$ का वर्ग है– (A) $0.04x^2 - 0.25y^2$ (B) $0.04x^2 + 0.25y^2 + 0.2xy$ (C) $0.4x^2 - 0.25y^2 - 0.2xy$ (D) $0.04x^2 + 0.25y^2 - 0.2xy$	1
36.	Factorise the expression : अभिव्यक्ति को गुणनखंडित करें– $-2 (x + y) + (x + y)^2 - 143$	2
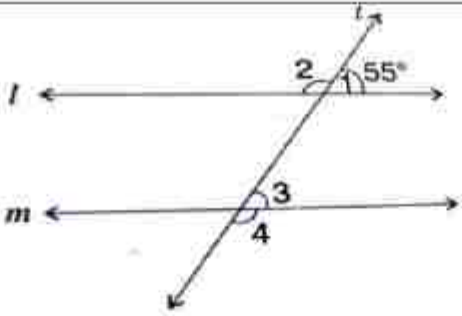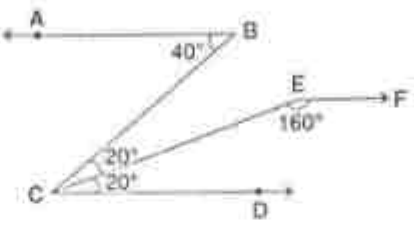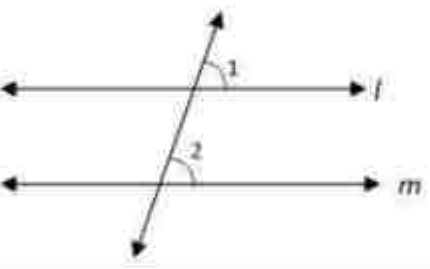
37.	The value of $(390)^2 - (310)^2$ is : $(390)^2 - (310)^2$ का मान है– (A) 5600 (B) 6400 (C) 64000 (D) 56000	1
38.	If the volume of a rectangular box (cuboid) is $(2xa^2 - 2xb^2)$ cubic units, then possible dimensions of the box are : यदि एक आयताकार बॉक्स (घनाभ) का आयतन $(2xa^2 - 2xb^2)$ घन इकाई है तो सभावित आयाम है– (A) $4x, (a + b), (a - b)$ (B) $x, (2a + b), (2a - b)$ (C) $(2xa + b), (2xa - b)$ (D) $2x, (a + b), (a - b)$	1
39.	What is the value of $\dfrac{a + 2}{5}$ if, $rs^2a = (4rs + 3s)^2 - (4rs - 3s)^2$? $\dfrac{a + 2}{5}$ का मान क्या है, यदि $rs^2a = (4rs + 3s)^2 - (4rs - 3s)^2$ है।	2
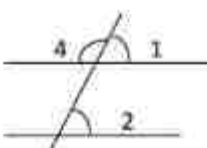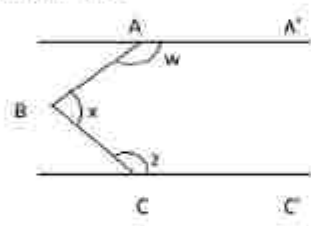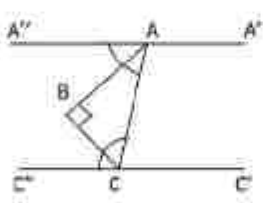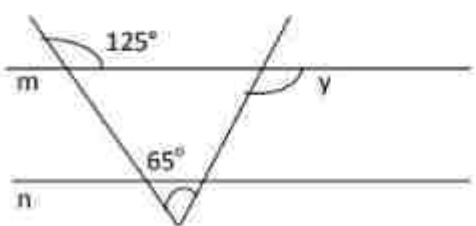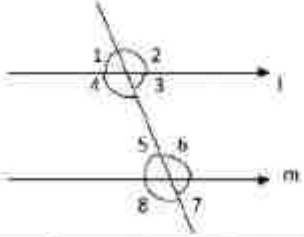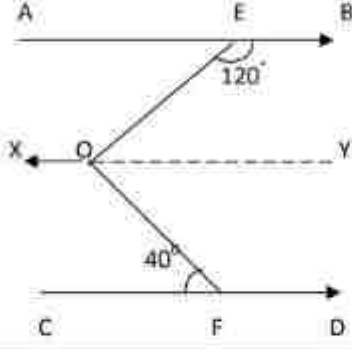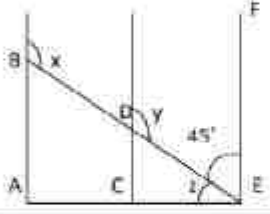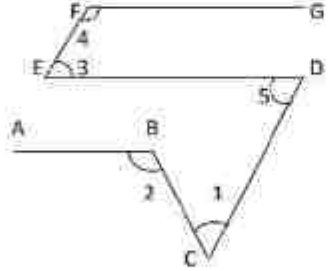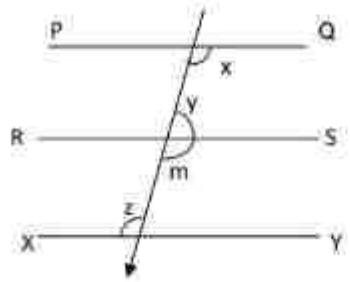
QUESTION BANK
CHAPTER: PARALLEL LINES
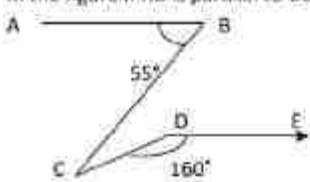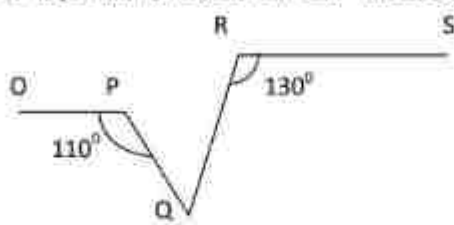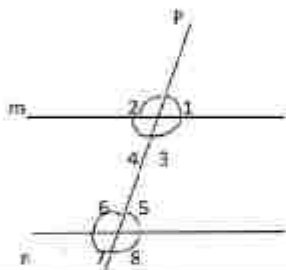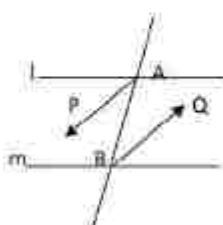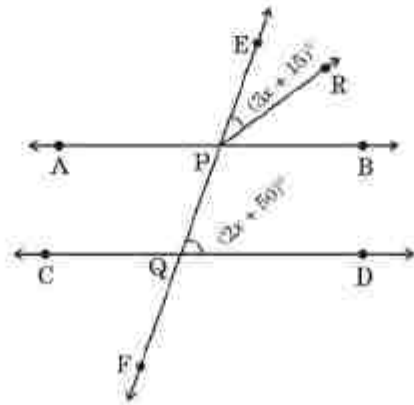
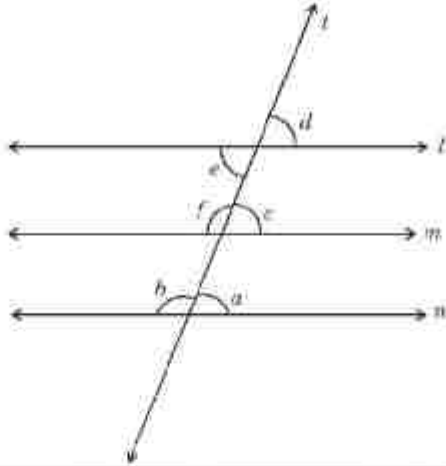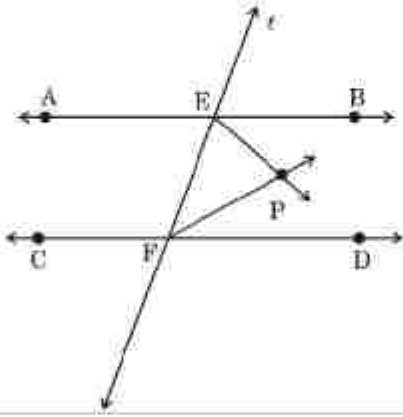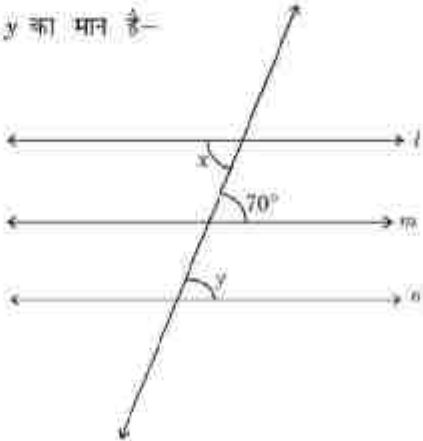| Sl.NO.	QUESTIONS	MARKS
1.	(a) In the figure $l \parallel m$. Find y **OR** (b) In the figure line AB ∥CD and line EF is the transversal, if ∠EPB=50° find ∠PQC. [2022-23]	1
2.	In the figure, if AB∥PQ, find the value of y . [2022-23]	2
3.	. In the given figure, if AB∥DE, ∠BAC=35° and ∠CDE=53°, find ∠DCE. [2022-23]	2
4.	If two parallel lines intersected by a transversal then pair of alternate interior angles are- A) equal B) supplementary C) complementary D) none of the above [2023-24]	1

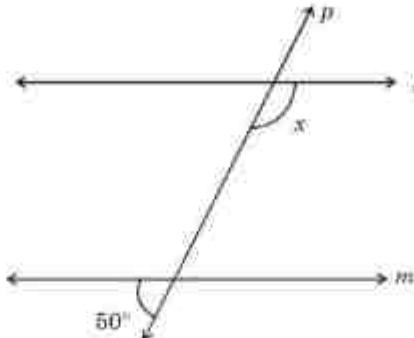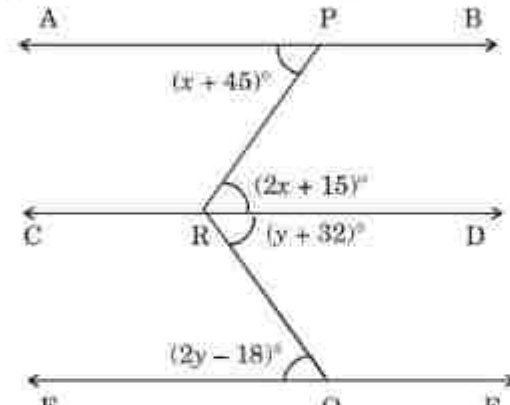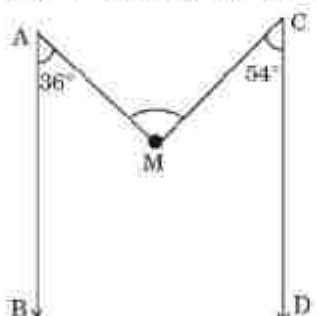|		
5.	In the given figure, AB∥PQ, find y. [2023-24] A) 59⁰ B) 121⁰ C) 116⁰ D) 118⁰	1
6.	In the given figure, if line m ∥ line n and line p is a transversal, then find x. [2023-24]	2
7.	In the given figure, show that (a) AB ∥ CD [2023-24] (b) EF ∥ CD (c) EF ∥ AB	3
8.	In the given figure, ∠OAB = 110⁰ and ∠BCD = 130⁰, then ∠ABC is equal to [2024-25] (a) 40⁰ (b) 50⁰ (c) 60⁰ (d) 70⁰	1
9.	If m ∥ n , then x= (a) 10⁰ (b) 20⁰ (c) 30⁰ (d) 40⁰ [2024-25]	1
10.	In the following figure l ∥ m, if ∠1 = 55°, find ∠2, ∠3 and ∠4.	2

[2024-25]

11.	In the given figure, show that (a) AB ∥ CD (b) EF ∥ CD **OR** Find the value of k if $\angle 1 = 150^0 - k$, and $\angle 2 = 60^0 + k$ and $l \parallel m$. [2024-25] 	2
12.	Two parallel lines l and m are cut by a transversal t. If the interior angles on the same side of t are $(2x-8)^0$ and $(3x-7)^0$, find the measure of each of these angles. [2024-25]	3
13	If two lines lie in the same plane and do not intersect each other are called a) parallel b) oblique c)transversal d)equidistant	1
14	Which of the following are not correct about two parallel lines? a) they lie in the same plane b)they intersect each other c)if they are cut by transversal than pair of corresponding angles are equal. d)if they are cut by transversal than alternate interior angles are equal	1
15	A line segment can be divided internally in the given ratio by constructing a)angles b)parallel lines c)perpendicular lines d)none	1

16	In the given figure which angles are equal? a)1 and 2 b)2 and 4 c)1 and 4 d)none	1
17	A line a makes an angle of 30°with line b, also line c makes an angle of 30°with line b. Then a) line a is parallel to line c b) line a is perpendicular to line b c) line a parallel to line b d) line a is perpendicular to line c.	1
18	If a transversal intersect 2 parallel lines , then each pair of corresponding angles are a)parallel b)perpendicular c)equal d)different	1
19	If two parallel lines intersected by a transversal then pair of alternate interior angles are a)equal b)sum of 2 angles is 360° c)complementary d)supplementary	1
20	A line that intersects 2 lines in different points is known as a)angles b)transversal lines c)vertex d)parallel lines	1
21	In the figure AA' || CC'. The size w of angle A'AB is equal to 135° and the size z of ∠C'CB is equal to 147°. Find the ∠ABC. 	2
22	In the figure lines A'A'' and C'C'' are parallel. AB is the bisector of ∠ CAA'' and BC is the bisector of ∠ACC''. Show that ∠ABC is 90°. 	2
23	Lines m and n are parallel find ∠y 	3

24	In the adjoining figure line l is parallel to m is cut by transversal. If $\angle 1=70°$ find the measure of angle 3, 5 and 6.	3
25	In the given figure AB is parallel to CD $\angle$ BEO= 120°, $\angle$CFO=40°. Find the $\angle$EOF.	3
26	In the given figure AB is parallel to CD ||EF and AE is perpendicular to AB, also $\angle$BAE= 90°. Find the values of angle x, y and z.	3
27	In the given figure AB ||ED, ED||FG, EF|| CD, $\angle 1=60°$, $\angle 3=55°$, then find the $\angle 2$, $\angle 4$ and $\angle 5$.	5
28	In the given figure PQ ||RS ||XY , also y:z =4:5 find the angles	5
29	If $\angle$ A=2x, $\angle$B = 3x these two angles on the same side of the transversal then find the value of x and measure of each angle.	3

30	In the figure if AB is parallel to DE, ∠ABC=55° and ∠CDE=160° then find the measure of ∠BCD	5
31	Two lines l and m are perpendicular to the same line n, what is the relation between line l and m, give reason for the answer.	3
32	In a figure if OP is parallel to RS, ∠OPQ =110° and ∠QRS =130° than find ∠PQR	5
33	In the figure P is transversal to lines m and n and ∠2 =120°, ∠5=60° Prove that m is parallel to n	5
34	AP and BQ are bisectors of two alternate interior angles formed by the intersection of transversal and with parallel lines l and m in the given figure. Show that AP is parallel to BQ.	5
35.	In the given figure, AB ∥ CD if PR is the bisector of ∠EPB, ∠EPR = $(3x + 15)°$ and ∠PQD = $(2x + 50)°$, then the value of x is :

दिए गए चित्र में AB ∥ CD है, यदि PR, ∠EPB का समद्विभाजक है, ∠EPR = $(3x + 15)°$ और ∠PQD = $(2x + 50)°$ है, तो x का मान है–

(A) 10

(B) 15

(C) 20

(D) 5

 | 1 |

| 36. | In the given figure, $l \parallel m \parallel n$, which of the following is not true? | 1 |
| | दी गई आकृति में $l \parallel m \parallel n$, निम्नलिखित में से कौन-सा सत्य नहीं है? | |

(A) $\angle a = \angle c = \angle d$

(B) $\angle c = \angle e$

(C) $\angle e + \angle f = 180°$

(D) $\angle b = \angle c$

| 37. | In the given figure, AB ∥ CD and t is the transversal. The angle bisector of interior angles intersect at P. Prove that $\angle EPF = 90°$. | 2 |
| | दी गई आकृति में, AB ∥ CD और t एक तिर्यक रेखा है. आंतरिक कोणों के कोण समद्विभाजक P पर प्रतिच्छेद करते हैं। सिद्ध कीजिए कि $\angle EPF = 90°$ है। | |

| 38. | In the given figure $l \parallel m \parallel n$, the value of '$x + y$' is : | 1 |
| | दी गई आकृति में, $l \parallel m \parallel n$. $x + y$ का मान है— | |

(A) 140°

(B) 220°

(C) 180°

(D) 35°

39.	In the given figure, $l \parallel m$. The value of 'x' is : दी गई आकृति में, $l \parallel m$, तो x का मान ज्ञात कीजिए।	1

(A) $50°$

(B) $45°$

(C) $40°$

(D) $130°$

40.	In the given figure, AB $\parallel$ CD $\parallel$ EF. Find the value of $y - x$. दी गई आकृति में, AB $\parallel$ CD $\parallel$ EF. $y - x$ का मान ज्ञात कीजिए।	2

41.	In the figure given below, AB $\parallel$ CD with $\angle BAM = 36°$ and $\angle DCM = 54°$. Find the measure of $\angle AMC$ and reflex $\angle AMC$. दी गई आकृति में, AB $\parallel$ CD जिसमें $\angle BAM = 36°$ और $\angle DCM = 54°$ है। $\angle AMC$ और वृहत्तकोण $\angle AMC$ का माप ज्ञात कीजिए।	5

PREVIOUS YEAR QUESTIONS
CHAPTER: DIRECT AND INVERSE VARIATION

SI.NO.	QUESTIONS	MARKS
1.	Find the value of k if x and y are in inverse variation: [2022-23] <table><tr><td>x</td><td>52</td><td>k</td></tr><tr><td>y</td><td>35</td><td>28</td></tr></table>	1
2.	(a) Oranges cost Rs 72 for three dozen in a super market. What is the cost of eight oranges? **OR** (b) If 15 men can repair a road in 24 days, then how long will it take nine men to repair the same road? [2022-23]	
3.	In a camp, there is enough provision for 500 students for 30 days. If 100 more students join the camp, for how many days will the provision lasts? [2022-23]	3
4.	A train 210 m long took 12 seconds to pass a 90 m long tunnel. Find the speed of the train. Hence find how much time will it take to cross a platform 790 m long? [2022-23]	5
5.	Which of the following is correct statement? [2023-24] A) If x and y are in direct proportion, then $1/x$ and $1/y$ are in direct proportion B) If x and y are in direct proportion, then $1/x$ and $1/y$ are in inverse proportion C) If x and y are in direct proportion, then $1/x$ and $1/y$ neither in direct nor in inverse proportion D) If x and y are in direct proportion, then $1/x$ and $1/y$ are sometimes in direct and sometimes in inverse proportion	1
6.	If 18 dolls cost ₹ 630, how many dolls can be bought for ₹ 455? [2023-24]	2
7.	If 15 men can do a work in 12 days, how many men will do the same work in 6 days? **OR** A train travels 112 km in 1 hour 30 minutes with a certain speed. How many kilometres it will travel in 4 hours 45 minutes with the same speed? [2023-24]	3
8.	A garrison of 120 men has provision for 30 days. At the end of five days, five more men joined them. How many days can they sustain on the remaining provision? [2023-24]	3
9.	Two quantities x and y are in inverse proportion. Then if y is doubled, x becomes [2024-25] (a) one -third (b) halved (c) two-third (d) doubled	1
10.	If 12 men can do a piece of work in 20 days, how long will it take 40 men to do it? [2024-25] (a) 12days (b) 6 days (c) 40days (d) 16 days	1

11.	How long will a train, 120 m long, take to cross a platform, 130 m long, if its speed is 50 km/hr? [2024-25]	3
12.	There is provision of food for 50 days of 1000 soldiers in a fort. How many soldiers should leave after 15 days so that the remaining food last for 40 days? [2024-25]	5
13	If A can finish work in n days then the part of work finished in 1 day is a)1—n b)1/n c)n—1 d)none of these	1
14	If an increase in quantity brings about corresponding decrease in the other and vice-versa than the two quantity vary a)directly b)inversely c)sometime directly and sometime inversely d)none	1
15	If speed is more than time to cover a fixed distance would be less. This is case of a)inverse variation b)direct variation c)none of the above	1
16	If x and y vary inversely. Then using the table the value of x for y=10 is | X	5
Y	30 | a) 10 b)40 c)15 d)20	1
17	A train is running at a speed of 75 km/hr. What distance will it cover in 20 minutes a)15km b)20km c)23km d)25km	1
18	In direct proportion y=k x, if x=3 when y=9, what is constant of proportionality k=____ a)12 b)3 c).333 d)none of these	1
19	In an indirect proportion y=k/x , x=4 when y=2, what is the constant of proportionality k=____ a)8 b)4 c)2 d)0.5	1
20	A car travels 14km in 25 minutes. Find out how far the car travels in 5 hours if the speed remains the same.	2
21	If 15 workers can finish tank in 42 hours. Calculate the number of workers required to complete the same task in 30 hours.	2
22	If cost of 16 apples is Rs160.Calculate the cost of 14 apples.	2
23	If x varies inversely as y and x=20 when y=600, find y when x=400.	2
24	The variable x varies directly as y and x=80 when y=160. Find the value of y when x = 64.	2
25	In a camp, there is enough flour for 300 persons for 42 days .How long the flour will last if 15 more people join the camp.	3
26	A contractor undertook a contract to complete a part of stadium in 9 months with a team of 560 workers. Later on, he was required to complete in 5 months. How many extra persons should he employ to complete the stadium?	3
27	Geeta types 108 words in 6 minutes. How many words would she type in half an hour?	3
28	It is given l varies directly as m i) write an equation which relates l and m. ii) Find the constant of proportion (k) when l is 6 then m is 18 iii) find l when m is 33.	3

29	If deposit of Rs2000 earns interest of Rs500 in 3 years, how much interest would a deposit of Rs36000 earn in 3 years at the same rate of simple interest?	3
30	The mass of aluminium rod varies directly with its length. If a 16cm long rod has a mass of 192g. Find the length of rod whose mass is 105gms.	3
31	If Naresh walks 250 steps to cover a distance of 200m. Find the distance travelled in 350 steps.	2
32	A car travels a distance of 225km in 25 litres of petrol. How many litres of petrol will be required to cover a distance of 540 km by this car?	3
33	If a and b varies inversely to each other, then find the value of p, q, r, x, y, z. i) 	a	2	Y	6	10
---	---	---	---	---
b	x	12.5	15	z | ii) | a	6	8	Q	25
---	---	---	---	---
b	18	P	39	r		3
34	If the 25 metres of cloth costs Rs 337.50 then i) what will be the cost of 40 metres of the same type of cloth? ii) what will be length of the cloth bought for Rs 675 ?	5
35	A swimming pool can be filled in 4 hours by 8 pumps of same type. How many such pumps are required if the pool is to be filled in $2\frac{2}{3}$ hrs?	5
36	At a particular time, the length of shadow of Minar whose height is 72 m is 80m. What will be the height of an electric pole, the length of whose shadow at the same time is 100m?	5
37.	a and b vary directly with each other for constant of variation 1.4, if $a = 28$, then the value of b is : a और b एक-दूसरे के परस्पर समानुपाती हैं। अचर विचरण 1.4 के लिए, यदि $a = 28$ है, तो b का मान है— (A) 0.2 (B) 20 (C) 39.2 (D) 2	1
38.	A garrison of 132 men has provision for 28 days. In the beginning of fifth day, 12 more joined them. How many days can they sustain on the remaining provision? 132 आदमियों की एक टुकड़ी के पास 28 दिनों का भोजन है। पाँचवे दिन की शुरूआत में, 12 आदमी और इनमें शामिल हो गए। सभी लोगों के लिए बचा हुआ भोजन कितने समय के लिए पर्याप्त होगा?	3

39.	Deep starts his journey to a certain place by car at 8 am and reaches the place at 12 noon. The speed of the car is 60 km/hr. If he increases the speed of the car, he can reach the destination at 11:00 a.m. What should be the increased speed?	3
	दीप सुबह 8:00 बजे कार से एक निश्चित स्थान के लिए अपनी यात्रा शुरू करता है और दोपहर 12 बजे उस स्थान पर पहुँचता है। कार की गति 60 किमी. प्रति घंटा है। यदि वह कार की गति बढ़ा दे, तो वह सुबह 11 बजे गंतव्य पर पहुँच सकता है। बढ़ी हुई गति क्या होनी चाहिए?	
40.	A woman can do a piece of work in 30 days. The part of work that she can do in 12 days is–	1
	एक महिला एक काम को 30 दिन में पूरा कर सकती है। काम का वह हिस्सा जो वह 12 दिन में पूरा कर सकती है–	
	(A) $\frac{1}{4}$ (C) $\frac{1}{3}$	(B) $\frac{3}{4}$ (D) $\frac{2}{5}$	
41.	A builder with a man power of 390 men can complete a work of construction of a building in 8 months. The owners asked the builder to complete the job in 6 months. Find the strength of man power increased by the builder to complete the job in given time.	3
	390 लोगों की जनशक्ति वाला एक बिल्डर एक इमारत के निर्माण का काम 8 महीने में पूरा कर सकता है। मालिक ने बिल्डर को 6 महीने में काम पूरा करने के लिए कहा। दिए गए समय में काम पूरा करने के लिए बिल्डर द्वारा बढ़ाई गई जनशक्ति का पता लगाएँ।	
42.	A train 380 m long is running between Delhi to Mathura at a speed of 72 km/hr. How much time (in seconds) will it take to cross a 160 m long bridge ?	3
	380 मीटर लंबी एक रेलगाड़ी दिल्ली से मथुरा के बीच 72 किमी. प्रति घंटे की गति से दौड़ रही है। 160 मीटर लंबे पुल को पार करने में उसे कितना समय (सेकंड में) लगेगा?	

QUESTION BANK
CHAPTER: PROFIT, LOSS & DISCOUNT

SI.NO.	QUESTIONS	MARKS
1.	An article is marked at Rs 940. If it is sold for Rs 799, then find the discount percent. [2022-23]	1
2.	Manjit bought an iron safe for Rs 12160 and paid Rs 340 for its transportation. Then, he sold it for Rs 12875. Find his gain percent. [2022-23]	2
3.	A dealer allows a discount of 16% to his customer and still he gains 5%. Find the marked price of the product which costs him Rs1200. [2022-23]	3
4.	(a) John sold an article to Peter at 20% profit and Peter sold it to Mohan at 5% loss. If Mohan paid Rs.912 for the article; find how much did John pay for it? OR (b) By reducing the selling price of an article by Rs50, a gain of 5% turns into a loss of 5%. Find the original selling price of the article. [2022-23]	5
5.	An article was sold for ₹1596 at a gain of 12%, then its cost price was- [2023-24] A)1230　　B) 1425　　C) 4567　　D) 7890	1
6.	**Assertion(A):** The marked price of a shirt is ₹940 and the shopkeeper allows a discount of 15% on it. Then the selling price of the shirt will be ₹799. **Reason (R):** to find SP, when MP and Discount % is given, we use the formula: $$SP = MP \times \left(\frac{100 - discount\%}{100}\right)$$ A) Both A and R are true and R is the correct explanation of A. B) Both A and R are true but R is not the correct explanation of A. C) A is true but R is false. D) A is false but R is true. [2023-24]	1
7.	A shop named RAVI ELECTRONIC CENTER where different kinds of electronics goods available. One day Ravi the shopkeeper. sold a watch for ₹ 990 and made a profit of 10%. He sold a radio at same price and suffered a loss of 10%. At the day end he sat to check the total transactions. **Answer the questions given below based on the above information:** i) What is the cost price of watch? A) ₹ 900　　B) ₹ 950　　C) ₹ 1000　D) ₹ 1100 ii) What is the cost price of Radio? A) ₹ 900　　B) ₹ 1050　　C) ₹ 1000　　D) ₹ 1100 iii) Overall, how much Ravi losses on that day? [2023-24]	4

	OR Find the selling price of radio if Ravi wanted to get 5% profit?		
8.	If the cost price of 10 greeting cards is equal to the selling price of 8 greeting cards, find the gain or loss percent. [2023-24] **OR** Manish sold a watch at 5% loss. Had he sold it for ₹ 104 more, he would have gained 8%. Find the selling price of the watch.	3
9.	Rohit purchased a jeans for ₹2000. He sold it for ₹1800. Then loss percent is [2024-25] a) 10% b) 15% c) 20% d) 30%	1
10.	Discount is always calculated on [2024-25] (a) cost price (b) marked price (c) selling price (d) GST	1
11.	Priti allows 8% discount on the marked price of the suits and still makes a profit of 15%. If her gain over the sale of a suit is Rs. 156, find the marked price of a suit. [2024-25] **OR** Nidhi purchased two sarees for Rs. 2,150 each. She sold one saree at a loss of 8% and the other at a gain. If she had a gain of Rs. 1,230 on the whole transaction, find the selling price of the second saree.	5
12.	On a season sale, Raghav sold a watch for Rs. 990 and made a profit of 10%. He sold a radio at the same price and suffered a loss of 10%. Based on the above information answer the following question: i) What is the C.P. of the watch? ii) What is the C.P. of the radio? iii) Find the total C.P. of both the items. **OR** iii) Find the total S. P. of both the items. [2024-25]	 1 1 2
13	The profit which a person earns on selling of an article is a) C.P+S.P b)S.P –C.P c)S.P+ C.P d)none	1

14	Geeta bought 12 pens for 240 and sold them for 300, what is the percentage of profit she made? a)10% b)25% c)30% d)none	1
15	Ram bought 8 balls for Rs80 and sold them for Rs 40 , find the percentage of loss he incurred a)50% b)20% c)15% d)70%	1
16	The discount by the shopkeeper is given on a)marked price b)cost price c)selling price d)none	1
17	Amit bought a television for Rs 30,000 and 18% GST was charged on it .How much amount does he pay for the television? a)35,400 b)38,000 c)40,000 d)29,000	1
18	Loss is always calculated on a)cost price b)selling price c)marked price d)GST	1
19	A boy buys 10 apples for Rs9.60 and sells them at 11 for Rs12. Find the profit percentage.	2
20	If the cost of 20 chairs be equal to selling price of 16 chairs. Find the gain or loss percentage.	2
21	Shyam sold his motor cycle to Ravi at a loss of 28%. Ravi spent Rs1680 on its repairs and sold the motorcycle to Hitesh for Rs35910 thereby making a profit of 12.5%. Find the cost price of the motor cycle.	2
22	The marked price of a ceiling fan is Rs 840. During off season it was sold for Rs 780. Find the percentage discount.	2
23	A lady shopkeeper allows her customers 10% discount on the marked price of the goods and still gets a profit of 25%profit. What is the cost price of the good for her marked at Rs 1250?	2
24	Rita had purchased a coat for Rs5600 including 12% GST .Find the cost of the coat before GST was added.	2
25	Tom purchased a cupboard for Rs24, 800 including GST, if the cost price of the cupboard is Rs 21,600. Find out how much GST (in %) has been paid.	2
26	Find out the amount to be paid if 18% GST is charged on a camera at Rs28,000.	2
27	A tradesman allows a discount of 15% on the written price. How much above the cost price must he mark the goods to make a profit of 19%?	2

28	Rita went to a shop and brought a dress for Rs9, 200 for herself and bought trouser for her father for Rs4, 500. If GST was on all goods at 15% on all purchased goods, then what is the total amount Rita has paid?	3
29	The marked price of an article is Rs4000 and rate of GST is 12%. A shopkeeper allows a discount of 15% and still makes a profit of 10%. Find the original price and the selling price including GST.	5
30	Nisha goes to the shop to buy a box costing Rs981. The rate of GST is 9%. She tells the shop keeper to allow a discount on the price of box to such an extent that she pays Rs 981 inclusive of GST. Find the discount in the price of the box.	5
31	I bought a dress at 30% discount on its marked price but later on I sold it on the marked price. Find out how much gain I made.	5
32	A shopkeeper sold a washing machine at a discount of 20% on the marked price of Rs28,000. The marked price included 28% GST. Did he make a profit or loss and what was its percentage?	5

33.	If selling price of five pens is equal to the cost price of four pens, then for net gain or loss which of the following is true? (A) 20% gain (B) 20% loss (C) 25% loss (D) 25% gain यदि पाँच पैन का विक्रय मूल्य चार पैन के क्रय मूल्य के बराबर हो, तो कुल लाभ या हानि के लिए, निम्न में से कौन-सा विकल्प सही है? (A) 20% लाभ (B) 20% हानि (C) 25% हानि (D) 25% लाभ	1
34.	Khushi started a business by investing ₹ 4,00,000. During the first three successive years, she earned a profit of 6%, 8% and 12% per annum respectively. After each year, the profit was added on the capital at the end of the previous year. Calculate her total profit after three years. खुशी ने 4,00,000 रुपये का निवेश करके एक व्यवसाय शुरू किया। पहली तीन लगातार वर्षों के दौरान. उसने क्रमश: 6%, 8% और 12% प्रति वर्ष का लाभ कमाया। प्रत्येक वर्ष के बाद लाभ को पिछले वर्ष के अंत में पूँजी में जोड़ा गया। 3 वर्षों के बाद उसके कुल लाभ की गणना करें।	5

| 35. | The value of a LED screen which was purchased three years ago, depreciates at 12% per annum. If its present value is ₹ 31944, find the value at which it was purchased.

तीन वर्ष पहले खरीदी गई एक LED स्क्रीन का मूल्य 12% प्रति वर्ष की दर से कम हो रहा है। यदि इसका वर्तमान मूल्य 31944 रु है, तो वह मूल्य ज्ञात कीजिए जिस पर इसे खरीदा गया था। | 5 |
|---|---|---|
| 36. | "During the Diwali Mela, various stalls are arranged, with one prominent stall showcasing a wide range of candles."

A shopkeeper is selling packets containing 10 candles at the rate of ₹ 300 per packet whereas cost price of each candle is ₹ 25.

Based on the above information, answer the following questions :

(1) Find the profit on each candle.

(2) Calculate the profit on each packet.

(3) If number of candles in each packet is reduced by 2, keeping the same S.P. then find the profit % earned on each candle.

OR

On the last day of Mela, number of candles in each packet is increased by 2, keeping the same S.P. then find the profit% or loss % on each candle. | 4 |

36.	A Real Estate developer is launching a new residential project, "Green Wood City", featuring 2 BHK, 3 BHK and 4 BHK flats. Details are given as follows :	4

Size	Category	C.P. per flat	Gain % or loss %	S.P. per flat
900–1100 sq. ft.	2 BHK	₹ 40,00,000	15% gain	—
1200–1500 sq. ft.	3 BHK	₹ 50,00,000	—	₹ 60,00,000
1800–2200 sq. ft.	4 BHK	₹ 60,00,000	—	₹ 65,00,000

Based on the above information, answer the following questions :

(1) Find the selling price of a 2 BHK flat.

(2) Determine the gain % on sale of one 3 BHK flat.

(3) If 10% of the cost price of a 3 BHK flat is utilized for its interior decoration and it is sold for ₹ 66,00,000, then find the gain %.

OR

Find the gain % on selling one 4 BHK flat. If he sold one flat of each type, then determine the total amount of profit earned.

37.	Naveen sells apples to his customers at the cost price itself and uses a weight of 800 g instead of 1 kg weight. His gain% will be	1

नवीन अपने ग्राहक को क्रय मूल्य पर ही सेब बेचता है लेकिन 1 किलोग्राम वजन के बजाय 800 ग्राम वजन का उपयोग करता है। उसका लाभ प्रतिशत होगा—

(A) 25% (B) 20%

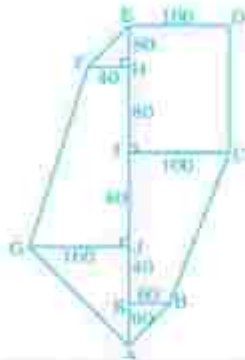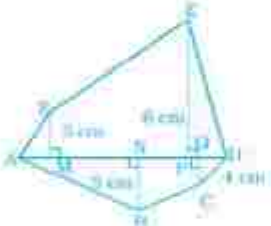(C) 15% (D) 30%

QUESTION BANK
CHAPTER: MENSURATION

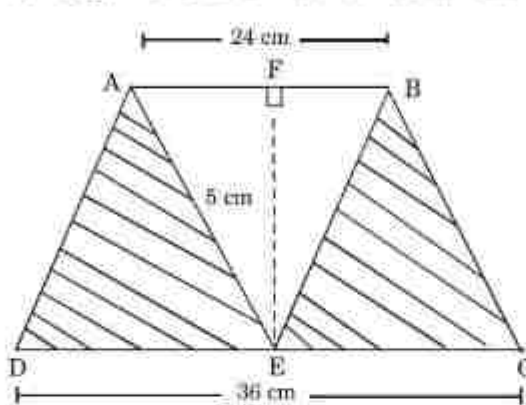| SI.NO.	QUESTIONS	MARKS
1.	(a) If the volume of a cube is $0.000001\ cm^3$. Find its length of each edge. **OR** (b) The area of a trapezium is $125m^2$. Find the sum of its parallel sides if its height is 5m. [2022-23]	1
2.	How many faces and edges does a tetrahedron have? [2022-23]	1
3.	Two cubes of side 4 cm are fixed together. Find the volume of the new solid formed. [2022-23]	2
4.	(a) If the length of each edge of a cube is doubled, how many times does its volume become? How many times does its surface area become? **OR** (b)The volume of a solid right circular cylinder is $448\pi cm^3$ and height is 7 cm. Find its total surface area. [2022-23]	3

5.	There was a land near a locality in the shape of a trapezium ABCD. The residents of the locality, with the permission of the concerned authorities decided to fence the land and convert it into a park with shady trees, plants and small herbal garden. The length of the parallel sides AB and DC of the land are 12 m and 28 m respectively and the non-parallel sides AD and BC are of equal length which is 10 m. The Park is divided into three parts by drawing two altitudes AE and BF.
	
	 Based on the above information, answer the following questions (any four):
	
	 I. What is the perimeter of the park?
	    (a) 50 m (b) 60 m (c) 40 m (d) 70 m
	
	 II. What is the length of DE?
	    (a) 16 m (b) 6 m (c) 8 m (d) 10 m
	
	 III. What is the length of the altitude of the trapezium ABCD?
	    (a) 16 m (b) 8 m (c) 10 m (d) 6 m
	
	 IV. What is the total area of the triangular portions?
	    (a) $48 m^2$ (b) $36\ m^2$ (c) $42\ m^2$ (d) $24 m^2$
	
	 V. What is the area of the trapezium ABCD?
	    (a) $160\ m^2$ (b) $120\ m^2$ (c) $240\ m^2$ (d) $200\ m^2$
	 [2022-23]
		4

6.	The number of faces a tetrahedron has [2023-24] A) 14 B) 12 C) 6 D) 4	1
7.	To over-come the scarcity of water in a village, the villagers decided to dig a well 20 m deep with diameter 7 m. The earth removed is spread uniformly to form a platform 22m by 14 m. The raised platform was later used for panchayat meetings and other noble causes.	4

	Based on the above information answer the following questions: i) Find the volume of earth that was dug out. A) 3080 m^3 B) 385 m^3 C) 770 m^3 D) 1540 m^3 ii) What is the height of the platform. A) 5 m B) 2.5 m C) 10 m D) 7.5 m iii) If the radius of a cylinder is halved, what is the resultant change in its volume? OR The volume of a cylinder is 150π cu. cm and its height is 6 cm, then find its total surface area. [2023-24]		
8.	Find the area of a trapezium whose parallel sides are 24 cm and 20 cm and the distance between them is 15 cm. [2023-24]	2	
9.	The diameter of the base of a right circular cylinder is 4.2 dm and its height is 1 dm. Find the curved surface area in cm^2. OR A rectangular piece of paper is 22 cm in length and 10 cm in width. It is rolled into a cylinder along its length. Find the curved surface area and volume of this cylinder. [2023-24]	5	
10.	The total surface area of cylinder with diameter of base 5 cm and height 30 cm will be [2024-25] (a) 510.7 cm^2 (b) 610 cm^2 (c) 505 cm^2 (d) 511cm^2	1	
11.	The number of faces of a tetrahedron is [2024-25] (a) 14 (b) 12 (c) 6 (d) 4	1	
12.	Assertion (A): A square prism has 6 faces, 8 vertices and 12 edges Reason (R): In a 3D polyhedron, $F - E + V = 2$ (a) Both Assertion (A) and Reason (R) are true and Reason is the correct explanation of Assertion(A). (b) Both Assertion (A) and Reason (R)s are true but Reason is not the correct explanation of Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true. [2024-25]	1	
13.	The length of a roller is 40 cm and its diameter is 21 cm. It takes 300 complete revolutions to move once over to level the floor of a room. Find the area of the floor of the room in m^2. Hence find the cost of polishing the floor at the rate of Rs. 17 per m^2. OR	5	

|			
	The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924 m^3. Find the diameter and the height of the pillar [2024-25]		
14.	A square plot was lying vacant in the locality. The children of that locality requested the plot owner to allow them to use it as a playground, the owner agreed. The plot was to be levelled and fenced. The total cost of levelling at the rate of ₹15 per square metre was ₹ 19440. The children were very happy to get a playground. Based on the above information answer the following question: (i) Find the area of the plot. (ii)Find the side of the playground. (iii)Find the cost of fencing the playground at the rate of ₹ 22 per metre. OR (iii) Find the square root of 36 by repeated subtraction method. [2024-25]	1 1 2	
15.	Anup after retirement thought to stay in village's house. After going there he found there was shortage of water in village, so he thought of constructing a well. He hired some labourers and guided them that well should be 7m in diameter and 20m deep. Based on the above information answer the following questions:		

	i) What is the shape of the well? ii) What will be the radius of the well? iii) What will be the volume of the earth dug out? OR iii) What will be the inner surface area of the well?　　[2024-25]	1 1 2	
16	What is the area of trapezium whose two parallel sides are 10 cm and 12 cm and height is 4cm? A) 42cm² 　b) 44 cm² 　c) 48cm² 　d) 46cm²	1	
17	What is the volume of a cuboid whose dimension are 5cmx 3cm x 2cm? a) 24cm³ 　b)36πcm³ 　c) 30cm³ 　d)17cm³	1	
18	The total surface area of cylinder with diameter of base 5cm and height 30 cm will be a)510.7 cm² 　b)610 cm² 　c) 505cm² 　d)511cm²	1	
19	Two cubes have their volume in the ratio 1:8. Find the ratio of their surface areas a) 1:4 　b)7:9 　c) 1:9 　d)5:3	1	
20	Three cubes whose edges are 3cm, 4cm and 5cm respectively melted without any loss of metal into single cube. The edge of new cube a)8cm 　b)6cm 　c)9 cm 　d)7cm	1	
21	½ (diagonal x sum of altitudes drawn on the diagonal from other two vertices) is the formula of area a)trapezium 　b)quadrilateral 　c)square 　d)rectangle	1	
22	If length of side of a cube is doubled then volume of the cube will a)increase 　b)decrease 　c)remain same 　d)8 times	1	
23	The surface area of four walls of the room is a)l x b x h 　b)perimeter of floor x height 　c)6L² 　d)none	1	
24	If the radius of two cylinder is same and height of one cylinder is double of the other cylinder than ratio of their volume is a)1:2 　b) 3:4 　c)5:7 　d)2:5	1	
25	The name of the given solid is a) triangular pyramid 　　b)rectangular pyramid c) rectangular prism 　　d) triangular prism	1	
26	Find the area of trapezium with base 15cm and height 8 cm, if the side parallel to the given base is 9cm long	2	
27	Find the height of a trapezium , the sum of the lengths of whose bases(parallel sides) is 60 cm and whose area is 600 cm²	2	
28	Find the sum of lengths of the bases of trapezium whose area is 42m² and whose height is 280 cm.	2	
29	The area of the trapezium is 105cm² and its height is 7cm. If one of parallel sides is longer than other by 6cm. Find the two parallel sides.	2	
30	The area of a trapezium is 384 cm². Its parallel sides are in the ratio 3: 5 and the perpendicular distance between them is 12cm. Find the length of each one of the parallel sides.	2	

31	Mohan wants to buy trapezium field .Its side along the river is parallel and twice the side along the road. If the area of this field is $10500m^2$ and perpendicular distance between the two parallel sides 100m. Find the length of side along the river.	3
32	The parallel sides of a trapezium are 40cm and 20cm. If its non-parallel sides are both equal, each being 26cm, find the area of the trapezium.	3
33	The area of a trapezium with equal non- parallel sides is $168m^2$. If the lengths of parallel sides are 36m and 20m, find the length of the non- parallel sides	3
34	Find the area of the following field .All dimensions are in metres	3
35	Find the area of polygon ABCDEF, if AD = 18cm, AQ = 14 cm, AP = 12 cm, AN = 8 cm, AM = 4 cm, and FM, EP, QC and BN are perpendiculars to diagonal AD.	3
36	An aquarium is in the form of Cuboid whose external measures 80cm x 80 cm x 40cm. The bottom, side faces and back faces are to be covered with a paper. Find the area of paper to be needed.	5
37	The paint in a certain container is sufficient to paint an area equal to $9.375m^2$. How many bricks measuring 22.5cm by 10cm by 7.5cm can be painted out of this container?	5
38	Three equal cubes are placed adjacently in a row. Find the ratio of total surface area of the new cuboid to the surface area of 3 cubes.	5
39	An agricultural field is in form of a rectangle of length 20 m and width 14m. A pit 6m long, 3m wide and 2.5m deep is dug in the corner of the field and earth taken out of pit is spread uniformly over the remaining area of field. Find the extent to which level of field has been raised.	5
40	A swimming pool is 20 m long, 15m wide and 3m deep. Find the cost of repairing the floor and wall at the rate of Rs25 per square metre.	5
41	Find the number of bricks measuring 25 cm x 12.5cm x 7.5cm that are required to construct a wall 6m long, 5m high and 0.5m thick, while the cement and sand mixture occupies 1/20 of volume of the wall.	5
42	Find the capacity of water tank, in litres, whose dimensions are 4.2m, 3m and 1.8m?	3
43	External dimensions of a closed wooden box are in the ratio 5:4:3. If the cost of painting its outer surface at the rate of Rs5 per dm^2 is Rs11,750. Find the dimensions of the box.	3
44	Find the volume of cube if surface area is 294sq. cm	3
45	Find the volume of cube if one face of it has area 144 sq.cm	3

46	Volume of a cube is 3375 cubic cm. Find its total surface area.	3
47	In a temple there are 25 cylindrical pillars. The radius of each pillar is 28cm and height 4m. Find the cost of painting curved surface area of pillars at the rate of Rs8 per m^2.	5
48	A rectangular sheet of paper 44cm x 18 cm is rolled along its length and a cylinder is formed. Find the radius and curved surface area of the cylinder.	5
49	The diameter of a roller is 120 cm, length is 84 cm. If it takes500 complete revolutions to level the ground. Find the area of the play ground.	5
50	Two cylinder cans have bases of the same size. The diameter of each is 14cm.One of the cans is 10cm high and the other is 20 cm high. Find the ratio of their volume.	5
51	The radius and height of a cylinder are in the ratio 3:2 and its volume is 19,404cm³.Find its radius and height.	5
52	The capacity of a closed cylindrical vessel of height 1m is 15.4L. How many square metres of metal sheet should be needed to make it?	5
53	A hollow garden roller of 42cm diameter and length 152cm is made of cast iron 2 cm thick. Find the volume of iron used in the roller	5
54	The radii of 2 right circular cylinder are in the ratio 2:3 and their heights in the ratio 5 : 4. Calculate the ratio of their curved surface areas and also ratio of their volumes.	5
55	Can a polyhedron have for its faces i) 3 triangles ii) a square and 4 triangles.	2
56	Using Euler's formula find the unknown 	Faces	?	6	20
---	---	---	---
Vertices	6	?	12
Edges	12	9	?		3
57	How many faces, edges and vertices does a triangular prism have?	2
58	The area of a rectangle is numerically equal to its perimeter. If the length is 6 cm, then its width is : एक आयत का क्षेत्रफल संख्यात्मक रूप से उसके परिमाप के बराबर है। यदि आयत की लम्बाई 6 सेमी. है तो इसकी चौड़ाई है— (A) 3 cm (B) 1.5 cm (C) 2.4 cm (D) 6 cm	1
59	The height of a solid cylinder whose radius is 7 cm and the total surface area is 968 cm² is : एक ठोस बेलन की ऊँचाई जिसकी त्रिज्या 7 सेमी. और कुल पृष्ठीय क्षेत्रफल 968 वर्ग सेमी. है— (A) 15 cm (B) 17 cm (C) 19 cm (D) 21 cm	1
60	A cuboidal carton with dimensions 36 cm × 20 cm × 30 cm is completely filled with 100 identical rubik's cubes. Find the length of the side of each rubik's cube. 36 cm × 20 cm × 30 cm वाला एक घनाभ, एक समान 100 रूबिक्स घन से पूरी तरह भर जाता है। प्रत्येक रूबिक्स घन की भुजा की लम्बाई ज्ञात कीजिए।	2

| 61 | The circumference of the base of a cylindrical oil container is 8π cm. The height of the cylindrical container is same as the diameter of the base. How much oil can the cylindrical container hold?

एक बेलनाकार तेल कंटेनर के आधार की परिधि 8π सेमी. है। बेलनाकार कंटेनर की ऊँचाई उसके आधार के व्यास के बराबर है। बेलनाकार कंटेनर में कितना तेल है? | 2 |
| --- | --- | --- |
| 62 | Find the area of the shaded region in the figure given below.

नीचे दी गई आकृति में छायांकित भाग का क्षेत्रफल ज्ञात कीजिए।

 | 3 |
| 63 | Ankur, a student of class VIII loves watching and playing with birds of different kinds. One day, he had an idea to make an open bird bath in his garden. His brother who is studying in class X helped him to choose the material and shape of the bird bath. They both made a cuboidal bird bath of inner dimensions 24 cm × 20 cm × 5 cm with terracota tiles of thickness 1 cm.

Subsequently, they were motivated and made a number of bird baths.

Based on the above information, answer the following questions :

(i) The total surface area required to paint a bird bath from inside is :

(ii) Find the outer dimensions of the bird bath.

(iii) How many such bird baths can be completely filled with 19.2 litres of water ?

OR

Find the volume of the material used in making one bird bath. | 1

1

2 |

64	The lateral surface area of a cube whose side measures 0.5 cm is एक घन जिसकी भुजा 0.5 सेमी. है, का वक्र पृष्ठीय क्षेत्रफल है— (A) 0.25 cm^2 (B) 0.125 cm^2 (C) 1.5 cm^2 (D) 1 cm^2	1
65	A mug in the form of a right circular cylinder is three-fourth full of water. If the base radius of the mug is 3.5 cm and its height is 8 cm, then how much water is there in the mug ? एक लंब वृत्तीय बेलन के आकार के मग का 3/4 भाग पानी से भरा है। यदि मग के आधार की त्रिज्या 3.5 सेमी. और इसकी ऊँचाई 8 सेमी. है, तो मग में कितना पानी है?	2
66	In an eco-club activity, students were asked to make a cuboidal shaped pen holder using waste cardboard with dimensions 10 cm × 8 cm × 12 cm. Find the area of the cardboard used by the students to make 30 such pen holders. एक इको क्लब की गतिविधियों में छात्रों को 10 सेमी. × 8 सेमी. × 12 सेमी. विमाओं वाले बेकार कार्डबोर्ड का उपयोग करके एक घनाभाकार का पेन होल्डर बनाने के लिए कहा गया था। छात्रों द्वारा 30 इस प्रकार के पेन होल्डर बनाने के लिए उपयोग किए गए कार्डबोर्ड का क्षेत्रफल ज्ञात कीजिए।	2
67	Rain water which falls on a cuboidal roof of length 6 m and breadth 4 m is transferred into a cylinderical tank of internal radius 50 cm. What will be the height of water in the cylinderical tank if the rainfall is 2 cm ? 6 मीटर लंबाई और 4 मीटर चौड़ाई वाली एक घनाभकार छत पर गिरने वाले वर्षा के पानी को 50 सेमी. आंतरिक त्रिज्या वाले एक बेलनाकार टैंक में स्थानांतरित किया जाता है। यदि वर्षा 2 सेमी. है तो बेलनाकार टैंक में पानी की ऊँचाई क्या होगी?	3
68	In a School Math Exhibition, students of class VIII put up 5 tables showing different shapes made with 7 Tangram pieces. (See figure 1). Students asked the visitors to solve some questions related to area and perimeter of the figure formed by tangram pieces. One such figure is shown in figure 2. **(Figure, not to scale)**	
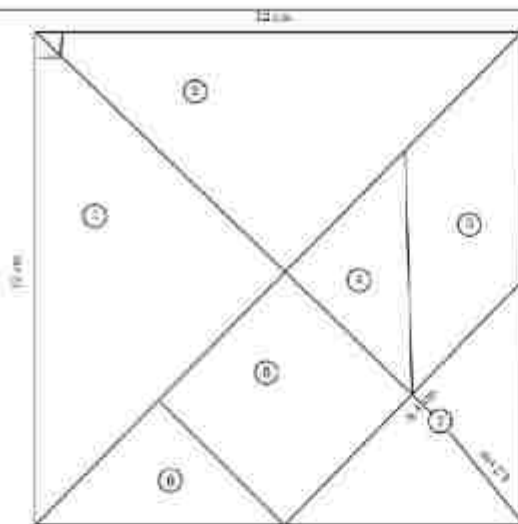
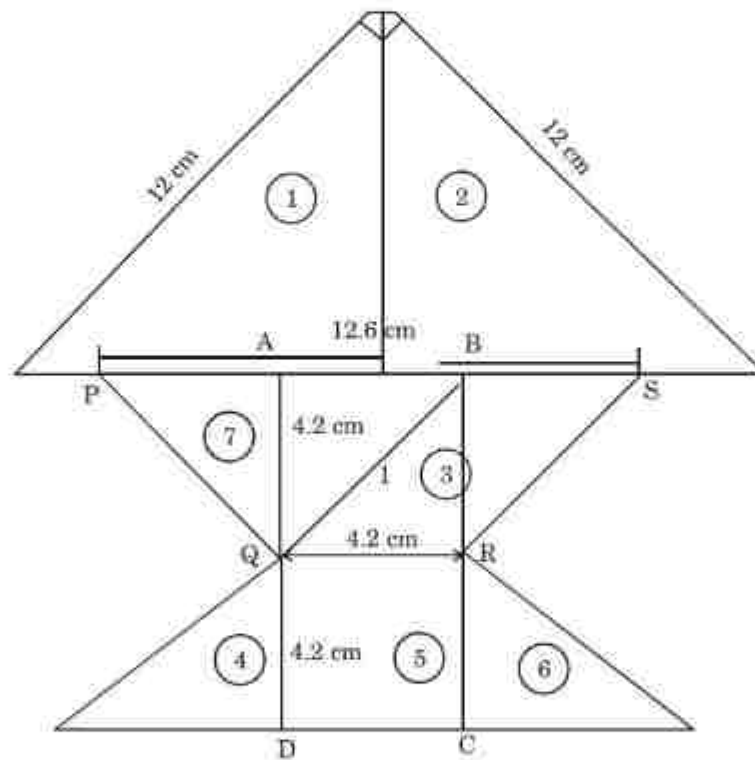Now based on the information, shown in the figures, answer the
following questions :

12 cm

12 cm

① ②

A   12.6 cm   B

P   S

⑦   4.2 cm

1   ③

Q ← 4.2 cm → R

④   4.2 cm   ⑤   ⑥

D   C

FIGURE 2

1

1

2

	(i) Find the area of the triangle formed by joining pieces 1 and 2 of tangram. (Refer fig. 2)	
	(ii) Find the perimeter of the triangle formed by joining pieces 1 and 2 of tangram. (Refer fig. 2)	
	(iii) Find the area of trapezium PQRS formed by joining piece 3 and 7 of tangram. (Refer fig. 2)	
	OR	
	Find the perimeter of Rectangle ABCD.	

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