

Chapter -7 Comparing Quantities**Choose the correct answer:**

1. If 60% of students are good at science out of 20 students. Then the number of students good at science is:

- (a) 12 (b) 15 (c) 5 (d) 10

2. Convert 0.16 into percent

- (a) 1.6% (b) 16% (c) 0.0016% (d) 1600%

3. $SP = CP + \dots\dots\dots$

- (a) Profit (b) Loss (c) 0 (d) none of these

4. $24\% + 36\% + \dots\dots\dots = 100\%$

- (a) 48% (b) 45% (c) 40% (d) 30%

5. The extra money charged by the borrower for using borrowed money for a given period of time is called

- (a) Principal (b) Interest (c) Amount (d) Cost Price

Assertion Reason

6. **Assertion (A)** –Mithlesh purchased a T.V for Rs10000 and sold it for Rs 8000. Loss % = 20%

Reason (R) –Loss percentage refers to the amount of loss incurred which is expressed or calculated in percentage.

- 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

7. **Assertion(A):** Simple interest is a quick and easy method of calculating the interest charge on a loan

Reason(R): The simple interest of Rs.500 at the rate of 5% is Rs.100. This interest is of the time 2 years.

- 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

8. Find the whole quantity if

- (a) 15% of it is 900 (b) 30% of it is 2700

9. The cost of a watch is Rs.360. If the shopkeeper sells it at a loss of 10%.Find the price at which it is sold?

10. Rs.15000 is borrowed at 7.5% rate of interest per annum. Find the amount to be paid at the end of 2 years.

11. What rate gives Rs.1200 as interest on a sum of Rs.24000 in 1 year?

12. If Anju gives an interest of Rs.600 for 1 year at 12%rate per annum. What is the sum she has borrowed?

13. You have Rs.3200 in your account and the interest rate is 5%.After how many years would you earn Rs. 800 as interest?

14. Sonia sold a laptop for Rs.16000 at a loss of 8%. What was its cost price?

15. Mohan bought a house for Rs.2,50,000 and sold it for 3,00,000. Find his loss% or gain% ?

Case study 1



1 . Two friends Vivek and Rahul , went shopping for snacks for their school picnic. They visited two different stores.

Store A : price of a packet of biscuits : Rs .20 ; Price of a bottle of juice : Rs . 120

Store B : Price the same packet of biscuit: Rs. 16 ; Price of the same type bottle of juice : Rs. 150

(a) What is the percentage increase in the price of biscuits when buying from Store A compared to Store B?

(b) What is the ratio of the price of a bottle juice in Store A to that in Store B?

(c) If Vivek buys 5 packets of biscuits and 2 bottles of juice from Store A and Rahul buys the same from Store B , How much does each friend spend? Who saves more?

Case study 2



Ravi invests ₹2000 in a bank for 3 years at an annual simple interest rate of 5%. The interest is paid at the end of the term.

Questions:

1. What is the rate of interest in percentage?
2. How much simple interest will Ravi earn after 3 years?
3. What will be the total amount received by Ravi at the end of 3 years?

Chapter-8 Rational Numbers**Choose the correct answer:**

1. The rational number $\frac{-21}{28}$ in standard form is

- (a) $\frac{-3}{4}$ (b) $\frac{3}{4}$ (c) $\frac{3}{7}$ (d) $\frac{-3}{7}$

2. Which of the following rational numbers is not equivalent to $7/-4$?

- (a) $\frac{14}{-8}$ (b) $\frac{21}{-12}$ (c) $\frac{28}{-16}$ (d) $\frac{7}{-8}$

3. The product of two rational numbers is always a _____.

- (a) integer (b) rational number (c) natural number (d) whole number

4. Find the sum $\frac{6}{4} + (\frac{-11}{4})$?

- (a) $\frac{4}{5}$ (b) $\frac{-5}{4}$ (c) $\frac{6}{3}$ (d) $\frac{-2}{3}$

5. Find $\frac{9}{4} \times (\frac{-8}{33}) = ?$

- (a) $\frac{-6}{11}$ (b) $\frac{-6}{5}$ (c) $\frac{3}{5}$ (d) $\frac{5}{2}$

6. Assertion: $\frac{-132}{11} = -12$.

Reason: If the dividend and divisor have unlike signs then the quotient will be negative.

a.) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion

b.) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

c.) Assertion is true but the reason is false.

d.) Assertion is false and reason is true.

7. Find four rational numbers between

- (a) $\frac{1}{2}$ and $\frac{-1}{2}$ (b) $\frac{-3}{4}$ and $\frac{-4}{3}$

8. Write three equivalent rational number of $\frac{-2}{7}$

9. Subtract $\frac{3}{4}$ from $\frac{5}{6}$.

10. Multiply $\frac{7}{9}$ by $\frac{-3}{4}$.

11. Divide $\frac{-8}{15}$ by $\frac{2}{5}$.

13. Compare $\frac{-1}{2}$ and $\frac{-5}{3}$

14. **Simplify:**

- a) $\frac{2}{5} + \frac{3}{10}$ b) $\frac{-7}{8} - \frac{1}{4}$ c) $\frac{3}{7} \times \frac{4}{9}$ d) $\frac{5}{6} \div \frac{2}{3}$

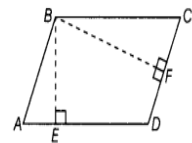
CASE-STUDY QUESTIONS

15. Raj donated $\frac{2}{3}$ rd of his salary to an NGO for the education of girls, his wife donated $\frac{2}{3}$ rd of her salary to the NGO on purchasing food items for the girls. Salary of Raj is 42000 and his wife salary is 24000 educate girls

- Write the amount donated by Raj.
- Write the amount donated by Raj's wife.
- Find total amount of donation by Raj and his wife?

Chapter 9: Perimeter and Area**Choose the correct answer:**

- The area of parallelogram is:
 - base + height
 - base \times height**
 - base / height
 - base - height
- If the area of the triangle is 36 cm^2 and the height is 3 cm, the base of the triangle will be:
 - 12 cm
 - 39cm
 - 18 cm
 - (d) 24 cm**
- The circumference of circle whose diameter is 14 cm will be:
 - (a) 44 cm**
 - 88 cm
 - 44 cm^2
 - 88 cm^2
- If the area of right angled triangle is 54 cm^2 . The length of its base is 12cm find its height
 - 4.8 cm^2
 - 4.5 cm^2
 - (c) 9 cm**
 - none of these
- The altitude of parallelogram whose area 20 cm^2 and base is 8cm.
 - 25cm
 - 5 cm
 - 2.5 cm^2
 - (d) 2.5cm**
- Area of parallelogram ABCD is not equal to
 - AD \times BE
 - BC \times BE
 - CD \times BF
 - d) CD \times DE**

**II ANSWER THE FOLLOWING QUESTIONS**

- One side of a parallelogram of area 153 cm^2 is 18 cm find distance of given side from its opposite side. (Ans. 8.5 cm)
- Find the altitude of a triangular region whose base is 28 cm and area is 224 cm^2 . (Ans, 16m)
- Circumference of a circle is 264 cm. Find its area. (Ans. 5544 cm^2)
- The ratio of radii of two circle is 4:5 . Find the ratio of their areas. (Ans. 16:25)

III ASSERTION AND REASONING

Choose the appropriate answers from given options

- (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

11. a) Assertion: Circumference of a circle is always more than 3 times its diameter.

Reason: Ratio of circumference and diameter of a circle is always constant.

Ans. (a)

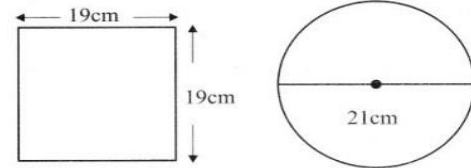
12. Assertion: All the congruent triangles have equal area.

Reason: Congruent triangles are not same in shape and size.

Ans. (C)

IV. CASE STUDY

13. A shopkeeper sells two kinds of 'Till Patti'. A square 'Till Patti' of side 19 cm cost ₹ 25 and a circular 'Till Patti' of diameter 21 cm cost ₹ 25.



Now answer the following question?

- a) Area of square shaped Till Patti?
 b) Area of circular shaped Till Patti?
 c) Buying Which Till Patti is a better deal?

14.

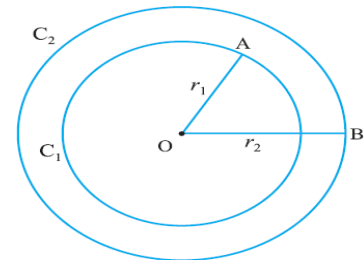
The adjoining figure shows two circles C_1 and C_2 with same Centre O. The radius $r_1 = 4$ cm

and $r_2 = 10$ cm

Find (a) the area of the smaller circle

(b) the area of the larger circle

(c) the shaded area between the two circle ($\pi = 3.14$)



CH: 10 ALGEBRAIC EXPRESSIONS:**CHOOSE THE CORRECT ANSWERS:**

1. The value of $x^2 + yx + 1$ at $x = 0$, $y = 1$ is
(a) 1 (b) -1 (c) 2 (d) 0
2. The expression $a^2b - ab^2 + a$ is a
(a) monomial (b) binomial (c) trinomial (d) None of these
3. The coefficient of x in $y^2x + y$
(a) y^2 (b) y (c) 1 (d) 0
4. The value of the expression $a^3 + b^3 + c^3 - 3abc$ for $a = 2$, $b = 3$, $c = 4$ is
(a) 3 (b) 6 (c) 9 (d) 27
5. What is the coefficient of x in the expression $(-x)$?
(a) 1 (b) -1 (c) x (d) $-x$
6. Write the expression for the statement: the sum of three and 11 times x .
(a) $x+3+11$ (b) $3x+11$ (c) $3+11x$ (d) $3x-11$

II. ASSERTION REASONING QUESTIONS:

7. Assertion: The value of $x^3 - 2x + 1$ when $x = 1$ is zero

Reason: $(1)^3 - 2(1) + 1 = 0$

- a) Both assertion and reason are correct and reason is correct explanation for assertion
- b) Both assertion and reason are correct but reason is correct explanation for assertion
- c) Assertion is correct but reason is false.
- d) Both assertion and reason are false.

8. Assertion : $4x^2$ is a monomial

Reason: In Monomial contain only one term.

- a) Both assertion and reason are correct and reason is correct explanation for assertion
- b) Both assertion and reason are correct but reason is correct explanation for assertion
- c) Assertion is correct but reason is false.
- d) Both assertion and reason are false.

9. Find the value of

- (a) $3p^2 + 4q^2 - 53p^2 + 4q^2 - 5$, when $p=3$ and $q=-2$
- (b) $x^3 - 3x^2y + 2xy^2 + 8xy + 9$, when $x=-3$ and $y=1$

10. What is an expression, and a coefficient. Identify the numerical coefficient of terms other than constants in the following expressions.

- i. $5 - 3t^2$
- ii. $1 + t + t^2 + t^3$
- iii. $x + 2xy + 3y$
- iv. $100m + 100n$

11. Identify the terms and their factors in the following expressions Show the terms and factors by tree diagrams.

(i) $5xy^2 + 7x^2y$

(ii) $8y + 3x^2$

12. Identify terms which contain x and give the coefficient of x.

i) $8 - xy^2$ ii) $2x^2y - 15xy^2 + 7y^2$

13. Group the like terms together from the following expressions:

$-8x^2y, 3x, 4y, -32x, 2x^2y, -y$

14. Simplify the following expressions and then find the numerical values for $x = -2$.

(i) $3(2x - 4) + x^2 + 5$

(ii) $-2(-3x + 5) - 2(x + 4)$

15. Find the value of t if the value of $3x^2 + 5x - 2t$ equals to 8, when $x = -1$.

16. Simplify the following equation:

$3(2x + 1) + 4x + 15$ when the given value of x is -1.

Chapter -11

EXPONENTS AND POWERS

CHOOSE THE CORRECT OPTION

(1.) The value of $(2^2)^3$

(a) 2^2 (b) 2^3 (c) 2^1 (d) 2^6

(2.) What is the product of $5^3 \times 5^2$

(a) 5^6 (b) 5^5 (c) 5^4 (d) 5^1

(3.) Which of the following is equal to $2^5 \div 2^2$

(a) 2^3 (b) 2^7 (c) 2^1 (d) 2^4

(4.) What is the value of 100^0

(a) 1 (b) 0 (c) 4 (d) not defined

(5.) The exponential form of 10000 is

(a) 10^3 (b) 10^4 (c) 10^5 (d) none of these

(6.) The value of $(-2)^4$ is

(a) 8 (b) -8 (c) 16 (d) -16

(7.) $(-1)^{50}$ is equal to

(a) 1 (b) -1 (c) 50 (d) -50

(8.) $3^6 \times P^6$ is

(a) $3P^6$ (b) $6P^3$ (c) $3P^{12}$ (d) $6P^{12}$

(9.) 1353000000 in standard form is

(a) 1.353×10^6 (b) 1.353×10^3 (c) 1.353×10^9 (d) 1.353×10^{12}

(10.) **Assertion** : The exponential form for $8 \times 8 \times 8 \times 8$ taking base as 2 is 2^{12}

Reason: $(a^m)^n = a^{mn}$

- (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.

(11.) **Assertion** : $8^6 \div 8^5 = 8^1$

Reason: $a^m \div a^n = a^{m+n}$

- (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.

ANSWER THE FOLLOWING

(12.) Express the following as a product of prime factors in exponential form.

(i) 216 (ii) 108×192

(13.) Simplify

(i) $(4^0 + 2^0 + 5^0) \times 3^0$

(ii) $\frac{12^4 \times 125 \times 3^8}{6^3 \times 10^3 \times 3^5}$

(iii) $\frac{3^5 \times 10^5 \times 25}{5^7 \times 6^5}$

(14.) Expand by expressing powers of 10 in the exponential form

(i) 70,824

(ii) 1,69,835

(15.) CASE STUDY QUESTION



In our earth 361419000 square km of area is covered with water and 14864700 square km of area is covered with land. Find

- (i) Area of water in standard form ?
- (ii) Area of land in standard form ?
- (iii) Which has greater area ?

Chapter -13 VISUALISING SOLID SHAPES

Dimensions

Dimension is a measurable length along a direction.

Dimensions are length, breadth (or width) or height (or depth).

A point is dimensionless.

2D Figures

Two-dimensional figures have length and breadth or width

They are usually plane figures, like squares, rectangles, and circles.

3D or three-dimensional shapes

Solid shapes have length, breadth or width and depth or height.,

They are called 3D or three-dimensional shapes.

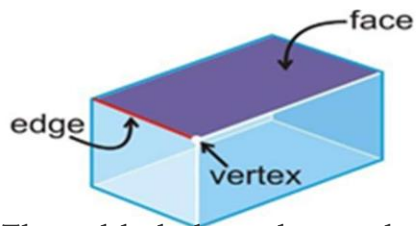
Example: Cuboids, Cylinders, Spheres and Pyramids

Faces, edges, and vertices

The corners of a solid shape are called its vertices.

The line segment joining two vertices is called an edge, or when two planes of a solid meet it forms an edge.

The surfaces of a solid shape are called its face.



The table below shows the number of faces, edges, and vertices some solid shapes

Name of the shape	Number of surfaces	Number of plane surfaces	Number of curved surfaces	Number of edges	Number of vertices
Cube	6	6	0	12	8
Cuboid	6	6	0	12	8
Cylinder	3	2	1	2	0
Cone	2	1	1	0	1
Sphere	1	0	1	0	0

Nets for Building 3-D Shapes

A net is a skeleton outline of a solid that can be folded to make it. The same solid can have several types of nets.

Example: A net for a cube box



Drawing Solids on a Flat Surface

Solid shapes can be drawn on a flat surface (like paper) realistically. We call this 2-D representation of a 3-D solid

Oblique Sketches

An oblique sketch does not have proportional lengths. Still, it conveys all important aspects of the appearance of the solid.

Isometric Sketches

An isometric sketch is drawn on isometric dot paper. In an isometric sketch of the solid, the measurements are kept proportional.

Visualising Solid Objects

Visualizing solid shapes is a very useful skill. For this, the ability to see 'hidden' parts of the

solid shape is required

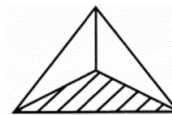
I. CHOOSE THE CORRECT OPTION:

1. Rakesh has 10 one-rupee coins of similar kind. He puts them exactly one on the other. What shape will he get it finally?

- (a) Cone (b) Cylinder (c) Sphere (d) Pyramid

2. The number of vertices of the solid shape is

- (a) 1 (b) 2 (c) 3 (d) 4



3. Which of the following solids has only one face?

- (a) Cone (b) Cylinder (c) Sphere (d) Pyramid

4. Two cubes of edge length 2 cm are placed side by side. The length of the resulting cuboid is

- (a) 2 cm (b) 4 cm (c) 1 cm (d) none

5. What cross-sections do you get when you give a horizontal cut to a die?

- (a) Square (b) Rectangle (c) Triangle (d) Circle

6. What cross-sections do you get when you give a vertical cut to a round apple?

- (a) Square (b) Rectangle (c) Triangle (d) Circle

7. The number of faces of a triangular pyramid or tetrahedron is _____.
(a) 4 (b) 6 (c) 5 (d) 1

8. Identify the false statement

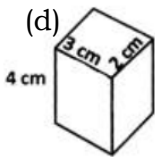
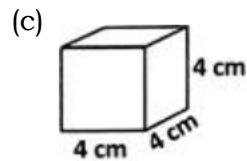
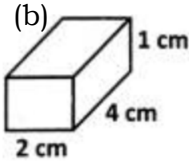
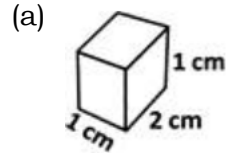
(a) A sphere has one flat surface.

(b) A cone has one flat face.

(c) A cylinder has two circular faces.

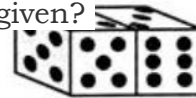
(d) A sphere has one curved face.

9. Which of the following is an oblique sketch of a cube of edge 4 cm?



10. What is the total on the face opposite to 4+3 on the dice given?

- (a) 3 (b) 12 (c) 5 (d) 7



11. Which of the following is the number of vertices of sphere?

- (a) 0 (b) 1 (c) 2 (d) 4

12. Can this be a net for a die? A)

