

Chapter 8

Comparing Quantities

Choose the correct answer:

- The ratio of speed of a motorbike 50 km per hour and speed of cycle 20 km per hour is:
A. 2:5 B. 5:1 C. 5:2 D. 1:2
- Out of 40 students in a class, 25% passed. How many students passed?
A. 20 B. 10 C. 30 D. 40
- There are 50 students in a class of which 40 are boys and the rest are girls. The ratio of number boys to number of girls is
A. 2:3 B. 1:5 C. 4:1 D. 2:5
- Aparna had Rs. 2000 with her. She spent 80% of the amount she had. How much money is left with her?
A: Rs. 100 B: Rs. 300 C: Rs. 200 D: Rs. 400
- The marked price of a book is Rs.300. The shopkeeper gives 25% discount on it. What is the sale price of the book?
A: Rs. 175 B: Rs . 225 C: Rs. 275 D: Rs. 125
- A bag is available for Rs.90. The shopkeeper allows a 10% discount on the marked price. What is the marked price of the bag?
A: Rs. 100 B: Rs. 90 C: Rs. 110 D: Rs. 120
- Find the simple interest on Rs. 1000 for 2 years at 8% per annum
A: Rs. 80 B: Rs. 40 C: Rs. 120 D: Rs. 160
- A sofa set was bought for Rs.10,000. Its value depreciated at the rate of 10% per annum Find its value after one year.
A: Rs. 11000 B: Rs. 9000 C: Rs. 10000 D: Rs. 11500
- VAT is always calculated on which of the following?
A: Selling price B: Marked Price C: Cost price D: Profit or Loss
- Discount is always calculated on which of the following?
A: Selling price B: Marked Price C: Cost price D: none of these

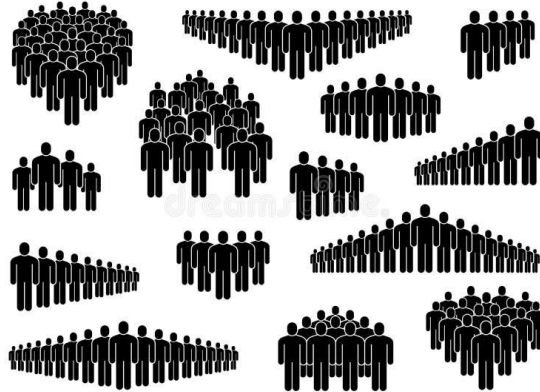
11.Assertion Reasoning Questions

Assertion: A toy marked at Rs. 40 is available for Rs.32. 40% discount is given on the marked price.

Reason: The price on the label of an article /product is called the marked price.

- Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion
 - Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.
 - Assertion is true but the reason is false.
 - Assertion is false but the reason is true.
12. **Assertion:** The simple interest on Rs.1000 for 2 years at 8% per annum is Rs.160.
Reason: Simple interest is a quick and easy method of calculating the interest charge on a loan.
- Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion
 - Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.
 - Assertion is true but the reason is false.
 - Assertion is false but the reason is true.
13. **Assertion:** If marked price of an article is Rs.1300 and discount is 10%. The selling price of the article is Rs.1180.
Reason: The selling price of an article can be calculated by the formula $S.P = \text{Marked Price} - \text{Discount}$.
- Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion
 - Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.
 - Assertion is true but the reason is false.
 - Assertion is false but the reason is true.

CASE BASED QUESTIONS:



1. The population of the city increased by 4% of what it had been at the beginning of each year. If the population of 1997 had been 6760000, find the population of the city.

- (i) in 1999
- (ii) in 1995
- (iii) Find the ratio of population in 1995 to 1997



2. A picnic is being planned for class VIII. Boys are 40% of the total number of students and are 20 in number. The picnic site is 60 km from the school and the transport company is charging at the rate of Rs.25 per km. The total cost of refreshments is Rs.3640.

- Find (i) Find the number of girls in the class?
(ii) Find the ratio of the number of boys to number of girls in the class?
(iii) Find the total expense for the picnic?
3. Find the amount if interest is compounded annually.
(i) Principal=Rs.5000, Rate =5%, Time period = 3 years.
(ii) Principal = Rs. 7000, Rate = 20%, Time period = 2 years.
(iii) Find the compound interest in both cases?

Answer the following:

- 1) 60% of 50 people prefer tea. How many people prefer coffee?
- 2) A laptop marked at ₹ 25,000 is available for ₹22500. Find the discount given and the discount per cent.
- 3) The cost of a television was ₹8000, and the sales tax charged 5%. Find the bill amount.
- 4) A pair of shoes has a list price of ₹6550. If a 25% discount is announced on sales, what is the amount of discount on it and its sale price?
- 5) After spending 40% of her money, Maya had ₹1200 left. How much money did she have in the beginning?

- 6) A toy car costs 660, including 15% VAT. What was the price of the car before VAT was added?
- 7) A sum of ` 20,000 is borrowed by Heena for 2 years at an interest of 8% compounded annually. Find the Compound Interest (C.I.) and the amount she has to pay at the end of 2 years.
- 8) The population of a country was 15000 in the year 2023. If it is growing at 2% per year, what will be the population in 2025?
- 9) An electronic gadget was bought for ₹15,000. After one year, the value of the gadget depreciated by 10%. Find the value of the gadget after one year.

CHAPTER -9**Algebraic Expressions****Choose the correct answer:**

1. Which of the following is obtained by subtracting $x^2 - y^2$ from $y^2 - x^2$?
- a) $-2(x^2 - y^2)$ b) $-2(x^2 + y^2)$ c) $2(x^2 + y^2)$ d) $2(x^2 - y^2)$
2. If we subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b - 3$, then the answer is:
- a) $8a + 2ab + 2b + 15$ b) $8a + 2ab + 2b - 15$ c) $8a - 2ab + 2b - 15$ d) $8a - 2ab - 2b - 15$
3. The volume of a cuboid with length, breadth, and height as $5x$, $3x^2$ and $7x^4$ respectively is:
- a) $105x^7$ b) $105x^2$ c) $105x^4$ d) $105x$
4. The area of a rectangle that has length = $2a^2b$ and breadth = $3ab^2$ is:
- a) $6a^3b^3$ b) a^3b^3 c) $2a^3b^3$ d) $4a^3b^3$
5. The side of a cube is $2a$. Find the volume of the cube.
- a) $4a^2$ b) $2a$ c) $8a^3$ d) 8
6. Multiplication of monomials x^2 , $(-x)^3$, $(-x)^4$ is equal to:
- a) x^9 b) x^5 c) x^7 d) x^6
7. The value of $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is:
- a) $x + y + z$ b) $x^2 + y^2 + z^2$ c) $xy + yz + zx$ d) 0
8. The value of $a^2 + a + 2b$, when $a = 1$, $b = -1$
- a) 4 b) 7 c) 0 d) -1
9. If we add, $7xy + 8yz - 6zx$, $4yz + 2zx - 7y$ and $-9xz + 5x - 2xy$, then the answer is:
- a) $5xy + 9yz + 3zx + 5x - 4y$ b) $5xy + 53yz + 3zx - 5x - 4y$
- c) $5xy + 12yz - 13zx + 5x - 7y$ d) $5xy + 10yz + 3zx + 5x - 6y$
10. The value of $x^2 - 5$ at $x = -1$ is-
- a) -2 b) -1 c) -4 d) -5
11. Assertion (A) – The value of $x^2 - 2yx + y^2$ when $x = 1$, $y = 2$ is 1

Reasons (R) – a numerical coefficient is defined as a fixed number that is multiplied to a variable.

- a. a) Both A and R are true, and R is the correct explanation of A
- b. b) Both A and R are true, but R is not the correct explanation of A
- c. c) A is true but R is false
- d. d) A is false but R is true
12. Assertion (A) – The number of like terms in $9x^3$, $16x^2y$, $-8x^3$, $12xy^2$, $6x^3$ is 3
- Reasons (R) – like terms are terms that have the same variables and powers.
- e. a) Both A and R are true, and R is the correct explanation of A
- f. b) Both A and R are true, but R is not the correct explanation of A
- g. c) A is true but R is false
- h. d) A is false but R is true

Answer the following:

- Add: $8x^2 + 7xy - 6y^2$, $4x^2 - 3xy + 2y^2$ and $-4x^2 + xy - y^2$
- Subtract: $3xy + 5yz - 7xz + 1$ from $-4xy + 2yz - 2xz + 5xyz + 1$
- Multiply $x^2 + 2y$ by $x^3 - 2xy + y^3$ and find the value of the product for $x = 1$ and $y = -1$.
- Multiply: $\frac{1}{2} x^2yz \times \frac{2}{3} xy^2z \times \frac{1}{5} x^2yz$
- What should be added to $10z^3 - 4z^2$ to get $14z^3 - z^2 - z$?
- Add: $\frac{2a}{3} - \frac{4b}{5} + \frac{5c}{2}$, $\frac{3a}{2} - \frac{2b}{7} + \frac{2c}{7}$, $\frac{3a}{5} + \frac{2b}{5} - \frac{4c}{5}$
- Subtract the sum of $3l - 4m - 7n^2$ and $2l + 3m - 4n^2$ from the sum of $9l + 2m - 3n^2$ and $-3l + m + 4n^2$
- Multiply: $(0.8a - 0.5b)$ by $(1.5a - 3b)$
- Simplify: $(3x - 2)(2x - 3) + (5x - 3)(x + 1)$

Chapter10**Mensuration**

Choose the correct answer:

- If the volume of a cube is 1728 cm^3 , the length of its edge is equal to
(a) 12 cm (b) 14 cm (c) 16 cm (d) 24 cm
- A rectangular sheet of paper $44 \text{ cm} \times 18 \text{ cm}$ is rolled along its length and a cylinder is formed. The volume the cylinder so formed is equal to
(a) 2772 cm^3 (b) 2505 cm^3 (c) 2460 cm^3 (d) 2672 cm^3
- If the volume of a vessel in the form of a right circular cylinder is $448\pi \text{ cm}^3$ and its height is 7 cm, then the curved surface area of the cylinder is
(a) $224\pi \text{ cm}^2$ (b) $212\pi \text{ cm}^2$ (c) $112\pi \text{ cm}^2$ (d) none of these
- If a cuboidal box has height, length, and width as 20 cm, 15 cm and 10 cm respectively. Then its total surface area is:
(a) 1100 cm^2 (b) 1200 cm^2 (c) 1300 cm^2 (d) 1400 cm^2
- The height of a cuboid whose volume is 275 cm^3 and base area is 25 cm^2 is:
(a) 10 cm (b) 11 cm (c) 12 cm (d) 13 cm
- The area of a trapezium is 480 cm^2 , the distance between two parallel sides is 15 cm and one of the parallel sides is 20 cm. The other parallel side is.
(a) 20 cm (b) 34 cm (c) 44 cm (d) 50 cm
- 1 liter is equal to how many cubic centimeters?
(a) 10 cu.cm (b) 100 cu.cm (c) 1000 cu.cm (d) 10000 cu.cm
- Surface area of a cube of edge 'a' is _
(a) $4a^2$ (b) $6a^2$ (c) $3a^2$ (d) a^2

Assertion and Reasoning:

In each of the following questions, an Assertion (A) and a corresponding Reason (R) supporting it are given. Study both the statements and state which of the following is correct:

- Both A and R are true, and R is the correct explanation of A.
 - Both A and R are true, but R is not the correct explanation of A.
 - A is true, but R is false.
 - A is false, but R is true.
11. Assertion (A): If the diagonals of a rhombus are 9 cm and 14 cm, its area will be 63 cm^2 .

Reason (R): Area of a rhombus $= \frac{1}{2} \times$ Products of the diagonals

12. Assertion (A): The lengths of the parallel sides of a trapezium are 33 cm and 25 cm and the distance between them is 18 cm. Its area is 520 cm^2

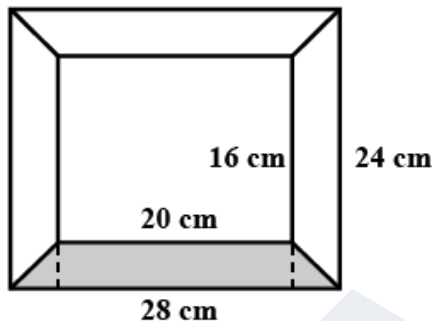
Reason (R): Area of a trapezium = $\frac{1}{2} \times \text{Height} \times (\text{Sum of the parallel sides})$

13. Assertion (A): The volume of a room is 80 m^3 . The area of the floor is 20 m^2 . The height of the room is 4m.

Reasons (R) –Volume is calculated by multiplying length x width x height.

CASE STUDY QUESTIONS:

- Water is poured into a cuboidal reservoir at the rate of 60 liters per minute. If the volume of reservoir is 108 m^3 ,
(i) Find the number of hours it will take to fill the reservoir.
(ii) If the radius and height of the cylindrical tank are 7 m and 10 m, find the capacity of the tank.
- Diagram of the adjacent picture frame has outer dimensions = $24 \text{ cm} \times 28 \text{ cm}$ and inner dimensions $16 \text{ cm} \times 20 \text{ cm}$. Find the area of each section of the frame if the width of each section is same.



- If radius of cylinder is tripled and height remains same
(i) How many times will its lateral surface area increase?
(ii) How many times will its volume increase?

Answer the following.

- The area of a trapezium is 60 m^2 , the distance between two parallel sides is 6m and one of the parallel side is 12 m. Find the other parallel side.
- Find the area of a rhombus whose diagonals are 8cm and 14cm long.
- The total surface area of a cube is 96 m^2 . Find its volume.
- Find the height of a cylinder whose radius is 7cm and the total surface area is 968 cm^2 .
- A diagonal of a quadrilateral is 50cm long and the length of the perpendiculars on it from the opposite vertices are 15cm and 17 cm. Find its area.
- The internal measures of a cuboidal room are 12m x 8m x 4m. Find the total cost of whitewashing its walls and ceiling at the rate of 100 per m^2 .
- Find the height of a cuboid whose volume is 624 cm^3 and base area is 78 cm^2 .
- The circumference of the base of a cylindrical vessel is 132 cm and its height is 25 cm. How many liters of water can it hold?
- A flooring tile has the shape of a parallelogram whose base is 28 cm and the corresponding height is 20 cm. How many such tiles are required to cover a floor of area 2800 m^2 ?

CHAPTER 11

EXPONENTS AND POWERS

Choose the correct answer:

- The value of 2^{-2} is:
A. 4 B. $\frac{1}{4}$ C. 2 D. $\frac{1}{2}$

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2. $2^2 \times 2^3 \times 2^4$ is equal to:
A. 2^{24} B. 2^{-5} C. 2^9 D. 2^{-9}
3. $5^4/5^2$ is equal to:
A. 5^6 B. 5^{-6} C. 5^{-2} D. 5^2
4. The value of $(3^4)^3$ is:
A. 3 B. 3^{12} C. 3^7 D. None of the above
5. $5^7/6^7$ will give the value:
A. $(\frac{5}{6})^7$ B. $(\frac{5}{6})^0$ C. $(\frac{5}{6})^{-7}$ D. $(6/5)^{-7}$
6. $100^0+20^0+5^0$ is equal to
A. 125 B. 25 C. $1/125$ D. 3
7. If $(-3)^{m+1} \times (-3)^5 = (-3)^7$, then the value of m is:
A. 5 B. 7 C. 1 D. 3
8. 700000000 is equal to:
A. 7×10^8 B. 7×10^7 C. 7×10^6 D. 7×10^9
9. 1.8×10^{11} is equal to:
A. 180000000000 B. 18000000000 C. 1800000000 D. 1800000000000
10. 0.09×10^{10} is equal to:
A. 900000000 B. 9000000 C. 9000 D. 9

II. ASSERTION AND REASONING:

1. Assertion: $(5/7)^0=1$

Reason: by exponential law, for any nonzero rational number x, $x^0=1$

- 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) Both assertion and reason are false

2. Assertion: $(1/2)^6$ is 2^6

Reason: by exponential law, $(a^m)^n=a^{m \times n}$

- 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) The assertion is false, but the reason is true.

III. CASE STUDY:

1. On our Planet Earth approximately 71% is covered with water and 29% is land, out of this some area is covered by deserts on different continents. The deserts of the world are given in the following table.

S.No	Deserts of World	Area (Square Km.)
1	Kalahari, South Africa	932400
2	Thar , India	199430
3	Gibson, Australia	155400
4	Great Victoria, Australia	647500
5	Sahara, North Africa	8598800

- (1) - Write the area of Sahara Desert in standard form.
- (2)-After writing in standard form, arrange these values in ascending order.
- (3)-Using the data in given table, find the total desert area in Africa in standard form.
- (4)-The ratio of area of Kalahari and Gibson Desert is (a) 1: 4 (b) 3: 2 (c) 6: 1 (d) 1: 2

2. Once a crook came to a rich trader to trick him. He said, "I will give you one lakh rupees daily for one month (30 Days) if you will give me just one rupee for first day and from next day you will give me double of what you give me on previous day." The greedy trader, without showing far-sightedness accepted the offer and signed a contract.

- (1) - How much amount did the crook give to the trader in 30 days?
- (2)-How much amount is to be paid to the crook by the trader on 10th day?
- (3)-Amount paid by the trader to the crook on 20th day is a) 2^{21} b) 2^{20} c) 2^{19} d) 2^{18}
- (4)-For whom was the deal more profitable –the trader or the crook? Justify your answer also.

Answer the following:

1. Find the multiplicative inverse of the following
a) 5^{-3} b) 10^{-20} c) 2^{-5} d) 3^{-7}
2. Expand the following numbers using exponents
a) 1576.634 b) 2035.25
3. Simplify and write in exponential form
a) $(-5)^{-4} \times (-5)^{-3}$ b) $p^4 \times p^{-10}$
4. Find the value of: (a) 2^{-3} (b) $1/5^{-2}$ (c) $(2/7)^{-2}$
5. Simplify: (a) $\{(1/3)^{-2} - (1/2)^{-3}\} \div (1/4)^{-2}$ (b) $(3/5)^{-7} \times (5/3)^{-5}$ (c) $(1/3)^{-3}$
6. Simplify and write the answer in the exponential form
(a) $(3^5 \div 3^7)^5 \times 3^{-5}$ (b) $\{(1/8) \times 2^5\} \div 4^2$
7. Find m so that $\{(-5)^6 \div (-5)^3\} \times (-5)^m = (-5)^{10}$
8. Simplify: $\frac{4^{-3} \times a^{-4} \times b^8}{4^{-5} \times a^{-7} \times b^5}$
9. (I) Express in standard form: (a) 0.00000006502 (b) 0.000000301
(II) Express in usual form: (a) 5.03×10^{-7} (b) 2.0002×10^9 (c) 5.2146×10^{12}

Chapter13

DIRECT AND INVERSE PROPORTIONS

Choose the correct answer:

1. If x and y are inversely proportional, then:
a) $x+y=\text{constant}$ b) $x-y=\text{constant}$ c) $xy=\text{constant}$ d) $x/y=\text{constant}$
2. If $x \propto y$ and $x_1=5$, $y_1=210$ and $x_2 = 2$, then find y_2 ?
a) 200 b) 84 c) 99 d) 70
3. If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh 2500 grams?
a) 750 b) 800 c) 850 d) 950
4. If x and y are directly proportional, then which of the following is correct?
a) $x+y=\text{constant}$ b) $x-y=\text{constant}$ c) $xy=\text{constant}$ d) $x/y=\text{constant}$
5. If x and y are inversely proportional, then which one is true?
a) $x_1/y_1 = x_2/y_2$ b) $x_1/x_2 = y_1/y_2$ c) $x_1/x_2 = y_2/y_1$ d) $x_1 \cdot x_2 = y_1 \cdot y_2$
6. A man walks 20 km in 5 hours. How much time it will take for him to walk 32 km?
a) 3 hours b) 4 hours c) 6 hours d) 8 hours
7. If 300 Kg of coal cost 6000₹, then find the cost of 120 kg of coal?
a) 1200₹ b) 2400₹ c) 3200₹ d) 4200₹
8. Manvi types 200 words in 30 minutes. How many words she will type in 12 minutes?
a) 100 b) 80 c) 60 d) 50
9. A car takes 18 hours to ride 720 kilometers. Time taken by the car to travel 360 kilometers is:

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- a)10 hours b)11 hours c)9 hours d)16 hours

10. The perimeter of a square and its side is in:

- a)Direct Proportion b)Indirect Proportion c)Neither direct nor indirect d)Cannot be determined

II. CASE STUDY QUESTION:

- 1) Deepak and his family went on a road trip by car. They visited four cities. City 1 was 500 km from their home. The petrol tank in their car has a capacity of 35 liters. The car runs 20 km on one liter.

city	City 1	City 2	City 3	City 4
Distance travelled by the car	500	1000	1500	2000

From city 4, they travelled 500 km to reach home.

- a) How many liters of petrol did they use to complete the road trip?
- i. 100
 - ii. 125
 - iii. 200
 - iv. 2500
- b) The family travelled 500 km in a day. What is the smallest number of days in which the road trip can be completed?
- c) The car travelled at a uniform speed of 75 km/hr between city 3 and 4. How much distance did it travel in 20 minutes?
- 2) A hotel has 320 rooms and 32 cleaners to maintain them. With full capacity of staff, it took 2 hours to clean all the rooms.
- a) Ishan says, "The number cleaners available in the hotel is directly proportional to the time taken by them to clean the rooms." Mira says, "The number of cleaners available in the hotel is inversely proportional to the time taken by them to clean the rooms." Who is correct? Give reason.
- b) An equal number of rooms are allocated for each staff member for cleaning. How many rooms did each cleaner have to maintain?
- c) The hotel administration hired 8 more cleaners. What is the change in the number of rooms maintained by each cleaner?
- i. The total number of rooms decreases by 2.
 - ii. The total number of rooms increases by 2.
 - iii. The total number of rooms increases by 3.
 - iv. The total number of rooms decreases by 3.

III. ASSERTION REASONING QUESTIONS:

1. Assertion: If the cost of 16 books is 300. Then the cost of 18 books is 337.50.
Reason: In a direct proportion, when one increases the other increases and vice versa.
- e) Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion.
- f) Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.
- g) Assertion is true but the reason is false.
- h) Assertion is false but reason is true.
2. Assertion: If 24 men can dig a trench in 7 days, it takes 12 days by 10 men to dig a similar trench.
Reason: In an inverse proportion, when one decreases other increases and vice versa.
- a) Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion.

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- 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 but reason is true.
3. Assertion: If cost of 93 m of a certain kind of plastic sheet is 1395. Then the cost of 100 m is 1575.
Reason: In a direct proportion, when one increases the other increases and vice versa.
- 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 but reason is true.

ANSWER THE FOLLOWING

- 1. A train travels 112km in 1 hour 30 minutes at a certain speed. How many kilometers it will travel in 4 hours 45 minutes at the same speed?
- 2. If the cost of 93m of a certain kind of plastic sheet is Rs 1395, then what would it cost to buy 105m of such plastic sheet?
- 3. 55 cows can graze a field in 16 days. How many cows will graze the same field in 10 days?
- 4. If the weight of 6 sheets of paper be 45 grams, how many sheets would weigh $1\frac{1}{2}$ kg?
- 5. A workforce of 210 men with a supervisor can finish a certain piece of work in 5 months. How many extra men must be employed if he wants to complete job in just 2 months?
- 6. In a scout camp, there is a food provision for 300 cadets for 42 days. If 50 more people join the camp, for how many days will the provision last?
- 7. A water tanker can finish a certain journey in 10 hours at the speed of 38km/hr. But how much should its speed be increased so that it may take only 8 hours to cover the same distance?
- 8. A mixture of paint is prepared by mixing 1 part of blue pigment with 5 parts of base.
- a) In the following table, find the parts of base that need to be added.

Parts of blue pigment	1	4	9	12
Parts of base	5			

- b) If 1 part of blue pigment requires 45ml of base, how much blue pigment should we mix with 900ml of base?
9. In a school, the prize money of Rs 2,00,000 is to be divided equally among the top scorers. Complete the following table and find whether the prize money given to an individual scorer is directly or inversely proportional to the number of scorers?

No. of top scorers	1	2	4	6	8	10
Prize for each scorers	2,00,000	1,00,000				

Chapter14

FACTORISATION

1 The common factor of a^3b^3 and ab^2 is:

A a^2b^2

B. ab^2

C. a^2b

D. ab

2. the factorisation of $z-7+xy - xyz$ gives:

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- A. $(z-7)(1-xy)$ B. $(z-7)(1+xy)$ C. $(z+7)(1-xy)$ D. $(7-z)(1-xy)$
3. Factorise the expression $(m+n)^2 - 4mn$
A. $(m-n)$ B. $(m+n)^2$ C. $(m-n)^2$ D. $(m+n)$
4. Factorize $16x^5 - 144x^3$
A. $x^3\{(4x+12)/(4x-12)\}$ B. $x^3\{(4x+12)(4x-12)\}$ C. $x^3\{(4x+12)(4x+12)\}$ D. $x^3\{(4x-12)(4x-12)\}$
5. Obtain factors of $3m^2 + 9x + 6$
A. $3(m+1)(m+2)$ B. $3(m+1)(m-2)$ C. $3(m-1)(m+2)$ D. $3(m-1)(m-2)$
6. The factors of expression $(m^4 - 256)$ are:
A. $(m+4)^2$ B. $(m-4)^2$ C. $(m^2+16)(m-4)(m+4)$ D. None of the above
7. Factorize the expression $p^2 - 10p + 21$.
A. $(p-7)(p-3)$ B. $(p+7)(p-3)$ C. $(p-7)(p+3)$ D. $(p+7)(p+3)$
8. Divide $24(x^2yz + xy^2z + xyz^2)$ by $8xyz$
A. $3(x^2+y^2+z^2)$ B. $(x^2yz + xy^2z + xyz^2)$ C. $3(x^3yz + xy^2z + xyz^2)$ D. $3(x+y+z)$
9. Divide $(m^2 - 14m - 32)$ by $(m+2)$
A. $(m-16)$ B. $(m+2)$ C. $(m+16)$ D. None of these
10. Divide $y(5y^2 - 80)$ by $5y(y+4)$
A) $2(y+4)$ B) $(y+4)$ C) $2(y-4)$ D) $(y-4)$

Assertion Reasoning

Q11. Assertion(A): The common factor of x^2y^2 and x^3y^3 is x^2y^2

Reasons (R) –The factorization is defined as expressing or decomposing a number or an algebraic expression as a product of its prime factors or irreducible factors.

- 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

ANSWER THE FOLLOWING

1. Factorize: $24a^3b^2 + 48a^2b^3$
2. Factorize: $49p^2 - 36$.
3. Divide $15m^5 + 12m^4 - 9m^3 + 6m^2$ by $3m^2$
4. Factorize: $a^2 + 2ab - 1 + b^2$
5. Factorize: $6xy - 4y - 6 - 9x$.
6. Factorize: $p^2 - 11p + 28$
7. Factorize: $x^4 - 256$
8. Factorize: $a^4 - (a-b)^4$
9. Factorize the following expressions and divide them as directed:
 - a) $x^2 + 13x + 36$ by $(x+4)$
 - b) $55(a^4 - 5a^3 - 24a^2)$ by $11a(a-8)$.

Chapter15

INTRODUCTION TO GRAPH

- A graph that displays data that changes continuously over periods of time is called
[a] Bar graph [b] Pie chart [c] Histogram [d] Line graph
- Following graph describes the movement of a car from a town A to town D. Study the graph and answer the following questions.



- What is the distance between town A and town D ?
- When did the car start from town A ?
- Where did the car stop and for what duration ?
- How long did it take to go from town C to town D ?

1)

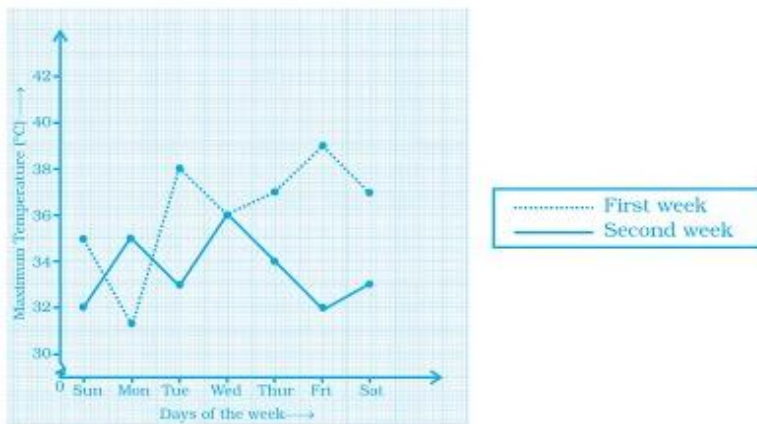
Make a line graph for the area of a square as per the given table.

Side (in cm)	1	2	3	4
Area (in cm ²)	1	4	9	16

Is it a linear graph?

2)

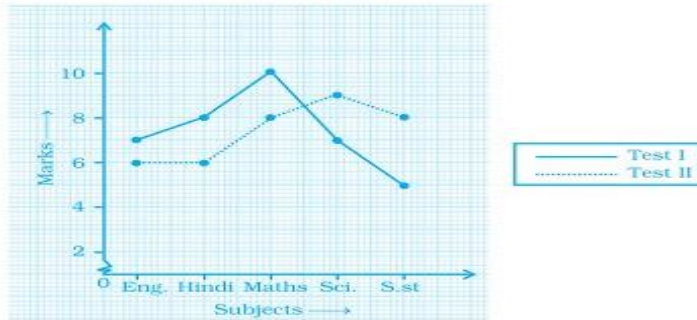
- The graph shows the maximum temperatures recorded for two consecutive weeks of a town. Study the graph and answer the questions that follow.



- What information is given by the two axes?
- In which week was the temperature higher on most of the days?
- On which day was the temperature same in both the weeks?
- On which day was the difference in temperatures the maximum for both the weeks?
- What were the temperatures for both the weeks on Thursday?
- On which day was the temperature 35°C for the first week?

3)

- The graph given below shows the marks obtained out of 10 by Sonia in two different tests. Study the graph and answer the questions that follow.



- What information is represented by the axes?
- In which subject did she score the highest in Test I?
- In which subject did she score the least in Test II?
- In which subject did she score the same marks in both the Tests?
- What are the marks scored by her in English in Test II?
- In which test was the performance better?
- In which subject and which test did she score full marks?

4)

The following table gives the growth chart of a child.

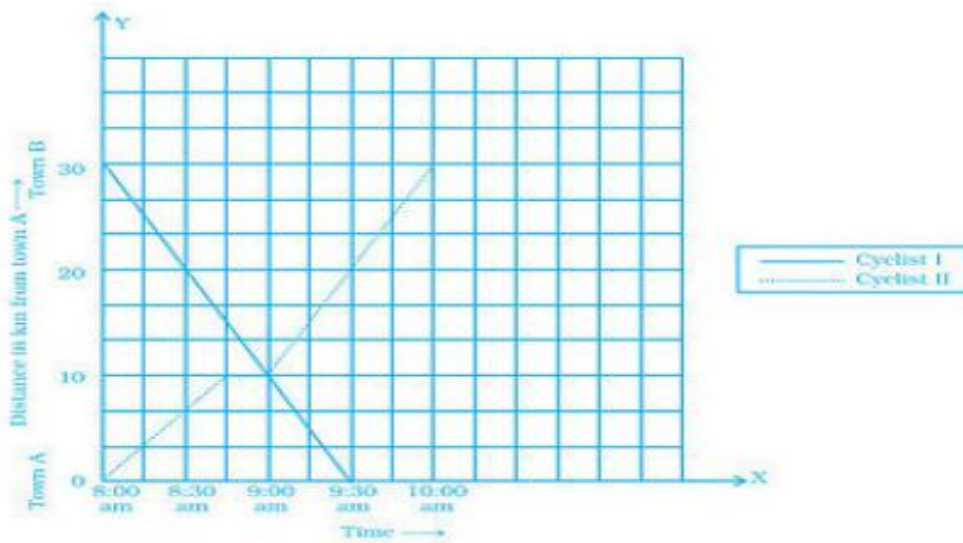
Height (in cm)	75	90	110	120	130
Age (in years)	2	4	6	8	10

Draw a line graph for the table and answer the questions that follow.

- What is the height at the age of 5 years?
 - How much taller was the child at the age of 10 than at the age of 6?
 - Between which two consecutive periods did the child grow more faster?
- 5)

The following graph shows the journey made by two cyclists, one from town A to B and the other from town B to A.

- At what time did cyclist II rest? How long did the cyclist rest?
- Was cyclist II cycling faster or slower after the rest?
- At what time did the two cyclists meet?
- How far had cyclist II travelled when he met cyclist I?
- When cyclist II reached town A, how far was cyclist I from town B?



BN