

2. In the standard form of a rational number, the common factor of a numerator and the denominator is always

- a. 0 b. 1 c. -2 d. 2

3. the standard form of $-32/40$ is.

- a. $-32/40$ b. $-4/5$. c. $4/-5$. d. $32/-40$

4. -3 can be written in the form of p/q as

- a. $-3/-1$ b. $-3/0$. c. $0/-3$. d. $-3/1$

5. How many rational number are there between two rational number

- a. 2 b. 0 c. 100 d. unlimited

Chap11

1. The breadth of a rectangle whose length is 12 cm and perimeter is 36 cm^2

- a. 6 cm b. 3 cm c. 9 cm d. 12 cm

2 Find the area of a square Park of whose perimeter is 96 cm,

- a. 576 cm^2 b. 626 cm^2 c. 726 cm^2 d. 748 cm^2

3. Find the length of a parallelogram, whose area is 246 cm^2 and base is 20 cm

- a. 1.23 cm b. 13.2 cm c. 12.3 cm d. 1.32 cm

4 A wire is bent to form a square of side 22 cm. If the wire is re-bent to form a circle, its radius is

- a. 22cm b. 14cm c. 11cm d. 7cm

5. 1 km^2 is equal to how many m^2

- a. 1000 b. 1000000 c. 100000 d. None

Chap 12

1. An algebraic expression containing three terms is called a

- a. monomial b. Binomial c. Trinomial d. None

2. Number of terms in the expression $3x^2y - 2y^2z - z^2x + 5$ is

- a. 2 b. 3 c. 4 d. 5

3. The subtraction of 5 times of y from x is

- a. $5x - y$ b. $y - 5x$ c. $x - 5y$ d. $5y - x$

4. The degree of the polynomial $x^3y - 2xy^4 + 5$ is

- a. 5 b. 4 c. 3 d. 2

5. The term of expression $4x^2 - 3xy$ are

- a. $4x^2$ and $-3xy$ b. $4x^2$ and $3xy$ c. $4x^2$ and $-x y$ d. x^2 and $3xy$

Chap 13

1. For any two non zero rational numbers x and y, $x^5 \div y^5$ is equal to

- a. $(x + y)^1$ b. $(x + y)^0$ c. $(x \div y)^5$ d. $(x + y)^{10}$

2. In standard form, then number 829030000 is written as $k \times 10^8$, where k is equal to

- a. 82903 b. 829.03 c. 82.903 d. 8.2903

3. The reciprocal of $\left(\frac{-2}{5}\right)^2$ is

- a. $\left(\frac{-5}{2}\right)^2$ b. $\left(\frac{5}{2}\right)^2$ c. $\frac{4}{25}$ d. $\frac{25}{4}$

4. If $a^x = 1$, then the value of x is (where $a \neq 1$)

- a. 1 b. 0 c. 2 d. None

5. $(-4)^4 \times (-2)^0 \times (-1)^{202}$ is equal to

- a. 64 b. 1 c. 0 d. 256

Fill the blank:

[1 MARK QUESTION]

Chap - 7

1. Two line segments are congruent, if _____

Answer: they have same length

2. Among two congruent angles, one has a measure of 70° , the measure of the Other angle is _____

Answer: 70°

3. When we write $\angle A = \angle B$, we actually means _____

Answer: both angle have equal measure

4. Two squares are congruent, they have same _____

Answer: length

5. Two triangles are said to be congruent, if pair of corresponding side and the corresponding----- are equal.

Answer: angle

Chap - 8

1. $18\frac{3}{4}\%$ = _____

Answer: 3:16

2. 30% of 300 is= _____

Answer: 90

3. A _____ with its denominator 100 is called a percent.

Answer: fraction

4. 15 kg is _____ percent of 50 kg.

Answer: 30%

5. In a class of 50 students, 8% were absent on one day. The number of students present on that day was _____

Answer: 46

Chap – 9

1 $-3/8$ is a _____ rational number.

Answer: Negative

2 1 is a _____ rational number.

Answer: Positive

3 The standard form of $\frac{-8}{-36}$ is _____

Answer: $2/9$

4 The standard form of $\frac{18}{-24}$ is _____

Answer: $(\frac{-3}{4})$

5 Additive inverse of $\frac{2}{3}$ is _____

Answer: $(\frac{3}{2})$

Chap – 11

1. 1 hectare is equal tom²

Answer: 10000

2. If the perimeter of an equilateral triangle is 9 cm. then, its area iscm².

Answer: 3.89 cm²

3. The diameter of a circle is 4cm.then its area iscm².

Answer: 12.57 cm²

4. The area of a rectangle is 200cm².if its breadth is 20 cm, then its length iscm.

Answer: 10 cm

5. If area of a triangular piece of a cardboard is 90cm² then the height corresponding to 20 cm long base is -
-----cm.

Answer: 9 cm

Chap -12

1. An algebraic expression containing ----- unlike terms is called a binomial.

Answer: two

2. Sum or difference of two like terms is -----

Answer: a like term

3. $3a^2b$ and $-7ba^2$ are -----terms.

Answer: like

4. In the expression $2\pi r$, the algebraic variable is -----

Answer; r

5. In x^4 , 4 is called the -----

Answer: exponent

Chap -13

1. $432 = 2^4 \times 3$

Answer: 3

2. $2^0 \times 5^0 =$ -----

Answer: 1

3. $8888800000 =$ ----- $\times 10^4$

Answer: 888880

4. $340900000 = 3.409 \times 10$

Answer: 8

5. $a^m \times a^n = a$

Answer:: m+n

Tell whether the statement is true or false:

[1 MARK QUESTION]

Chap - 7

1. If two Triangles are equal in area, when they will be congruent False
2. If the hypotenuse of another right angle triangle, then the Triangles are congruent. False
3. If three angles of a triangle are equal to the corresponding angles of another triangle , then the Triangles are congruent True
4. If two legs of a right angle triangle are equal to two legs of another right angle triangle, then the right angled Triangles are congruent. True
5. If two sides and one included angle of a triangle are equal to the two sides and one included angle of another Triangle, then the two Triangles are congruent. True

Chap – 8

1. 65% is equal to $5/3$. .False
2. When an improper fraction is converted into percentage, Then the answer can also be less than 100 .False
3. The interest on rupees 350 at 5% per annum for 73 days is rupees 35 False
4. Out of 600 students of a school, 126 go for a picnic. The percentage of students that did not go for the picnic is 75%. False
5. By selling a book for rupees 50, A shopkeeper suffered a loss of 10%. When the cost price of book is rupees 60. False

Chap – 9

1 Every natural number is a rational number, but every rational number need not be a natural number.

(T)

2. Sum of two rational numbers is always a rational number.

(T)

3. All decimal numbers are also a rational numbers.

(T)

4. The quotient of two rational is always a rational number.

(F)

5 .Ever fractions is a rational number.

(T)

Chap – 11

1 The area of a square of side 5cm is 30cm.

(F)

2 The area of a rectangle of sides 45cm and 12cm is 450cm^2

(F)

3 The perimeter of a triangle of sides 20 cm,12cm, 16cm is 48cm.

(T)

4 The circumference of a circle is 85m, if the radius of circle is 8m.

(F)

5 The area of a parallelogram is 550 m^2 and its base is 55m and height is 10m.

(T)

6 Triangles having the same base have equal area.

(F)

Chap -12

1 $(3a-b+3) - (a+b)$ is a binomial.

(F)

2 A trinomial can be polynomial.

(T)

3 Sum of x and y is $x + y$.

(T)

4 Sum of 2 and p is $2p$.

(F)

5 A binomial has more than two terms.

(F)

Chap – 13

1. $2^0 + 3^0 + 0^1 + 2^{136} = 1$.

(F)

2. $x^0 + x^0 = x^0 + x^0$ is true for all non zero values of x.

(T)

3. 4^9 is greater than 16^3 .

(T)

4. $\left(\frac{2}{5}\right)^3 \div \left(\frac{5}{2}\right)^3 = 1$.

(F)

5. $\left(\frac{7}{5}\right)^3 \times \left(\frac{5}{7}\right)^3 = \left(\frac{7}{5}\right)^0$

(T)

Solve: Each carry one mark:

[1 MARK QUESTION]

Chap – 7

1. Give any two real life examples for congruent shapes.

Answer: Same brand soap and candy

2. $\Delta PQR \cong \Delta BCA$. Write the part of ΔBCA that corresponding to $\angle Q$

Answer: $\angle C$

3. What is the side included between the $\angle A$ and $\angle B$ of ΔABC ?

Answer: side AB

4. Which angle is included between the sides DE and EF of ΔDEF ?

Answer: $\angle E$

5. $\Delta PQR \cong \Delta BCA$. Write the part of ΔBCA that corresponding to side QR

Answer: side CA

Chap – 8

1. Find ratio of 4 m to 400 cm.
2. Find the ratio of 9 m to 27 cm
3. Convert the given fractional numbers to percents.
(a) $\frac{1}{8}$ (b) $\frac{5}{4}$ (c) $\frac{3}{40}$
4. Find: (a) 15% of 250 (b) 75% of 1 kg (c) 1% of 1 hour
5. Find Loss or profit
(a) a radio bought for Rs 12000 and sold at Rs 13500.
(b) A skirt bought for Rs 250 and sold at Rs 150.

Chap – 9

1. Solve: (a) $\frac{-3}{5} + \frac{2}{5}$ (b) $\frac{3}{4} \times \frac{-2}{3}$
2. $\frac{-6}{7} = \frac{\quad}{42}$
3. Simplest form of $\frac{-21}{27}$
4. Find: Five rational numbers between 3 and 4.
5. Find the value of $(-4) \div \frac{2}{3}$

Chap – 11

- 1 Find the circumference of the circle with radius 14cm.
- 2 Find the area of circle with radius 35cm.
- 3 Find the circumference of the circle with radius 42cm.
- 4 Write formula: (a) Area of square (b) Area of rectangle
- 5 Find area of square with side 5 m.

Chap – 12

1. Show the terms and factors by tree diagrams: $1+x+x^2$
- 2 Add: $3mn, -5mn, 8mn, -4mn$
3. Subtract: $6xy$ from $-12xy$.
4. Find the value of the $4x-3$ for $x=2$
5. If $m = 2$, find the value of: $3m - 5$

Chap – 13

- 1 Express 256 as a power 2.
- 2 Which one is greater 3^2 or 2^3
- 3 Find the value of: (i) 2^6 (ii) 5^3 (iii) 11^2 (iv) 5^4
4. Express each of the following as a product of prime factor only in exponential form.

(i) 108×192

(ii) 56×84

5. Express the numbers in standard form.

(i) 5, 00, 00,000

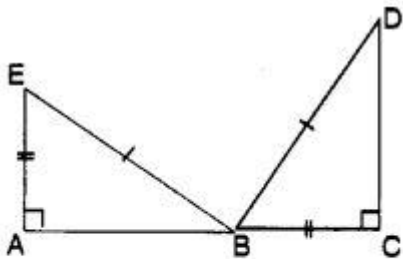
(ii) 3,18,65,00,000

Solve: Each carry two marks:

Chap – 7

1. Which congruence criterion do you use in given figure?

(a)



Given: $EB = DB$

$AE = BC$

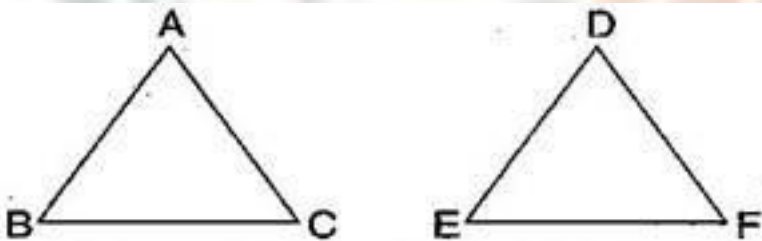
$\angle A = \angle C = 90^\circ$

So, $\triangle ABE \cong \triangle DCB$

(b) Which congruence criterion do you use in the following?

Given: $AC = DF, AB = DE, BC = EF$

So $\triangle ABC \cong \triangle DEF$



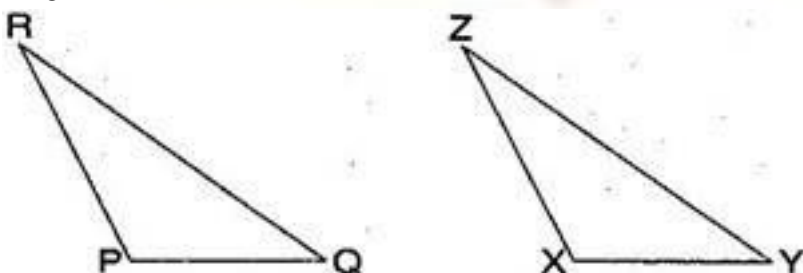
Answer: (a) By SSS congruence criterion, since it is given that $AC = DF, AB = DE, BC = EF$

The three sides of one triangle are equal to the three corresponding sides of another triangle.

Therefore, $\triangle ABC \cong \triangle DEF$

(b) Given: $RP = ZX, RQ = ZY, \angle PRQ = \angle XZY$ So

$\triangle PQR \cong \triangle XYZ$



Answer:

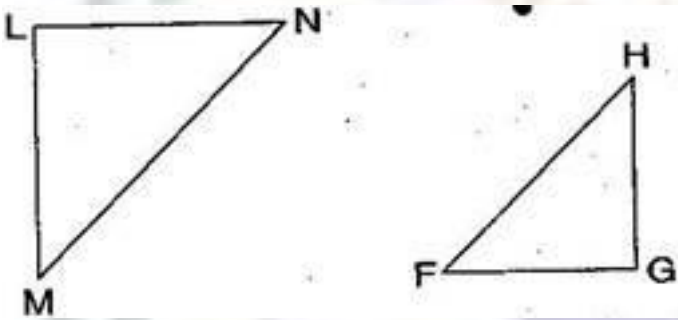
(b) By SAS congruence criterion, since it is given that $RP = ZX$, $RQ = ZY$ and $\angle PRQ = \angle XZY$

The two sides and one angle in one of the triangle are equal to the corresponding sides and the angle of other triangle.

Therefore, $\triangle PQR \cong \triangle XYZ$

(c) Given: $\angle MLN = \angle FGH$, $\angle NML = \angle HFG$, $ML = FG$

So $\triangle LMN \cong \triangle GFH$



Answer: By SAS congruence criterion, since it is given that $RP = ZX$, $RQ = ZY$ and $\angle PRQ = \angle XZY$

The two sides and one angle in one of the triangle are equal to the corresponding sides and the angle of other triangle

Therefore, $\triangle PQR \cong \triangle XYZ$

3 You have to show that $\triangle AMP \cong \triangle AMQ$. In the following proof, supply the missing reasons

Steps	Reasons
1. $PM = QM$	1. _____
2. $\angle PMA = \angle QMA$	2. _____
3. $AM = AM$	3. _____
4. $\triangle AMP \cong \triangle AMQ$	4. _____

Answer:

Steps	Reasons
1. $PM = QM$	1. Given
2. $\angle PMA = \angle QMA$	2. Given
3. $AM = AM$	3. Common
4. $\triangle AMP \cong \triangle AMQ$	4. SAS congruence rule

CHAP -8

4. Find the whole quantity if:

(a) 5% of it is 600

(b) 12% of it is Rs. 1080

(c) 40% of it is 500 km

(d) 70% of it is 14 minutes

(e) 8% of it is 40 liters

Answer: Let the whole quantity be x in given questions:

(a) 5% of $x = 600$

$$\Rightarrow \frac{5}{100} \times x = 600$$

$$\Rightarrow x = \frac{600 \times 100}{5} = 12,000$$

(b) 12% of $x = \text{Rs. } 1080$

$$\Rightarrow \frac{12}{100} \times x = 1080$$

$$\Rightarrow x = \frac{1080 \times 100}{12} = \text{Rs. } 9,000$$

(c) 40% of $x = 500 \text{ km}$

$$\Rightarrow \frac{40}{100} \times x = 500$$

$$\Rightarrow x = \frac{500 \times 100}{40} = 1,250 \text{ km}$$

(d) 70% of x = 14 minutes

$$\Rightarrow \frac{70}{100} \times x = 14$$

$$\Rightarrow x = \frac{14 \times 100}{70} = 20 \text{ minutes}$$

(e) 8% of x = 40 liters

$$\Rightarrow \frac{8}{100} \times x = 40$$

$$\Rightarrow x = \frac{40 \times 100}{8} = 500 \text{ liters}$$

5. Find the amount to be paid at the end of 3 years in each case:

(a) Principal = Rs. 1,200 at 12% p.a.

(b) Principal = Rs. 7,500 at 5% p.a.

Answer: (a) Here, Principal (P) = Rs. 1,200, Rate (R) = 12% p.a., Time (T) = 3 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{1200 \times 12 \times 3}{100} = \text{Rs. } 432$$

$$\text{Now, Amount} = \text{Principal} + \text{Simple Interest} = 1200 + 432 = \text{Rs. } 1,632$$

(b) Here, Principal (P) = Rs. 7,500, Rate (R) = 5% p.a., Time (T) = 3 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{7500 \times 5 \times 3}{100} = \text{Rs. } 1,125$$

$$\text{Now, Amount} = \text{Principal} + \text{Simple Interest} = 7,500 + 1,125 = \text{Rs. } 8,625$$

Chap 9

6. Find the sum:

(i) $\frac{5}{4} + \left(\frac{-11}{4}\right)$

(ii) $\frac{5}{3} + \frac{3}{5}$

(iii) $\frac{-9}{10} + \frac{22}{15}$

(iv) $\frac{-3}{-11} + \frac{5}{9}$

Answer: (i) $\frac{5}{4} + \left(\frac{-11}{4}\right) = \frac{5-11}{4} = \frac{-6}{4} = \frac{-3}{2}$

(ii) $\frac{5}{3} + \frac{3}{5} = \frac{5 \times 5}{3 \times 5} + \frac{3 \times 3}{5 \times 3} = \frac{25}{15} + \frac{9}{15}$

[L.C.M. of 3 and 5 is 15]

$= \frac{25+9}{15} = \frac{34}{15} = 2\frac{4}{15}$

(iii) $\frac{-9}{10} + \frac{22}{15} = \frac{-9 \times 3}{10 \times 3} + \frac{22 \times 2}{15 \times 2} = \frac{-27}{30} + \frac{44}{30}$

[L.C.M. of 10 and 15 is 30]

$= \frac{-27+44}{30} = \frac{17}{30}$

(iv) $\frac{-3}{-11} + \frac{5}{9} = \frac{-3 \times 9}{-11 \times 9} + \frac{5 \times 11}{9 \times 11} = \frac{27}{99} + \frac{55}{99}$ [L.C.M. of 11 and 9 is 99]

$= \frac{27+55}{99} = \frac{82}{99}$

7. Find:

(i) $\frac{7}{24} - \frac{17}{36}$

(ii) $\frac{5}{63} - \left(\frac{-6}{21}\right)$

(iii) $\frac{-6}{13} - \left(\frac{-7}{15}\right)$

(iv) $\frac{-3}{8} - \frac{7}{11}$

(v) $-2\frac{1}{9} - 6$

Answer: (i) $\frac{7}{24} - \frac{17}{36} = \frac{7 \times 3}{24 \times 3} - \frac{17 \times 2}{36 \times 2} = \frac{21}{72} - \frac{34}{72}$

[L.C.M. of 24 and 36 is 72]

$= \frac{21-34}{72} = \frac{-13}{72}$

(ii) $\frac{5}{63} - \left(\frac{-6}{21}\right) = \frac{5 \times 1}{63 \times 1} - \left(\frac{-6 \times 3}{21 \times 3}\right) = \frac{5}{63} - \frac{-18}{63}$ [L.C.M. of 63 and 21 is 63]

$$= \frac{5 - (-18)}{63} = \frac{5 + 18}{63} = \frac{23}{63}$$

$$\text{(iii)} \frac{-6}{13} - \left(\frac{-7}{15} \right) = \frac{-6 \times 15}{13 \times 15} - \left(\frac{-7 \times 13}{15 \times 13} \right) = \frac{-90}{195} - \left(\frac{-91}{195} \right) \quad [\text{L.C.M. of 13 and 15 is 195}]$$

$$= \frac{-90 - (-91)}{195} = \frac{-90 + 91}{195} = \frac{1}{195}$$

$$\text{(iv)} \frac{-3}{8} - \frac{7}{11} = \frac{-3 \times 11}{8 \times 11} - \frac{7 \times 8}{11 \times 8} = \frac{-33}{88} - \frac{56}{88}$$

[L.C.M. of 8 and 11 is 88]

$$= \frac{-33 - 56}{88} = \frac{-89}{88} = -1 \frac{1}{88}$$

$$\text{(v)} -2 \frac{1}{9} - 6 = \frac{-19}{9} - \frac{6}{1} = \frac{-19 \times 1}{9 \times 1} - \frac{6 \times 9}{1 \times 9} \quad [\text{L.C.M. of 9 and 1 is 9}]$$

$$= \frac{-19}{9} - \frac{54}{9} = \frac{-19 - 54}{9} = \frac{-73}{9} = -8 \frac{1}{9}$$

8 . Find the product:

$$\text{(i)} \frac{9}{2} \times \left(\frac{-7}{4} \right)$$

$$\text{(ii)} \frac{3}{10} \times (-9)$$

$$\text{(iii)} \frac{-6}{5} \times \frac{9}{11}$$

$$\text{(iv)} \frac{3}{7} \times \left(\frac{-2}{5} \right)$$

$$\text{Answer: (i)} \frac{9}{2} \times \left(\frac{-7}{4} \right) = \frac{9 \times (-7)}{2 \times 4} = \frac{-63}{8} = -7 \frac{7}{8}$$

$$\text{(ii)} \frac{3}{10} \times (-9) = \frac{3 \times (-9)}{10} = \frac{-27}{10} = -2 \frac{7}{10}$$

$$\text{(iii)} \frac{-6}{5} \times \frac{9}{11} = \frac{(-6) \times 9}{5 \times 11} = \frac{-54}{55}$$

(iv) $\frac{3}{7} \times \left(\frac{-2}{5}\right) = \frac{3 \times (-2)}{7 \times 5} = \frac{-6}{35}$

9. Find the value of:

(i) $(-4) \div \frac{2}{3}$

(ii) $\frac{-3}{5} \div 2$

(iii) $\frac{-4}{5} \div (-3)$

(iv) $\frac{-1}{8} \div \frac{3}{4}$

(v) $\frac{-2}{13} \div \frac{1}{7}$

(vi) $\frac{-7}{12} \div \left(\frac{2}{13}\right)$

(vii) $\frac{3}{13} \div \left(\frac{-4}{65}\right)$

Answer: (i) $(-4) \div \frac{2}{3} = (-4) \times \frac{3}{2} = (-2) \times 3 = -6$

(ii) $\frac{-3}{5} \div 2 = \frac{-3}{5} \times \frac{1}{2} = \frac{(-3) \times 1}{5 \times 2} = \frac{-3}{10}$

(iii) $\frac{-4}{5} \div (-3) = \frac{(-4)}{5} \times \frac{1}{(-3)} = \frac{(-4) \times 1}{5 \times (-3)} = \frac{4}{15}$

(iv) $\frac{-1}{8} \div \frac{3}{4} = \frac{-1}{8} \times \frac{4}{3} = \frac{(-1) \times 4}{2 \times 3} = \frac{-1}{6}$

(v) $\frac{-2}{13} \div \frac{1}{7} = \frac{-2}{13} \times \frac{7}{1} = \frac{(-2) \times 7}{13 \times 1} = \frac{-14}{13} = -1\frac{1}{13}$

(vi) $\frac{-7}{12} \div \left(\frac{-2}{13}\right) = \frac{-7}{12} \times \frac{13}{(-2)} = \frac{(-7) \times 13}{12 \times (-2)} = \frac{-91}{24} = 3\frac{19}{24}$

(vii) $\frac{3}{13} \div \left(\frac{-4}{65}\right) = \frac{3}{13} \times \frac{65}{(-4)} = \frac{3 \times (-5)}{1 \times 4} = \frac{-15}{4} = -3\frac{3}{4}$

Chap 11

Question 1. The length and breadth of a rectangular piece of land are 500 m and 300 m respectively. Find:

(i) Its area.

(ii) The cost of the land, if 1 m^2 of the land costs Rs. 10,000.

Answer: Given: Length of a rectangular piece of land = 500 m and Breadth of a rectangular piece of land = 300 m

(i) Area of a rectangular piece of land = Length x Breadth

$$= 500 \times 300 = 1,50,000 \text{ m}^2$$

(ii) Since, the cost of 1 m^2 land = Rs. 10,000

Therefore, the cost of 1,50,000 m^2 land = 10,000 x 1,50,000

$$= \text{Rs. } 1,50,00,00,000$$

Question 2. Find the area of a square park whose perimeter is 320 m.

Answer: Given: Perimeter of square park = 320 m

$$\Rightarrow 4 \times \text{side} = 320$$

$$\Rightarrow \text{side} = \frac{320}{4} = 80 \text{ m}$$

Now, Area of square park = side x side

$$= 80 \times 80 = 6400 \text{ m}^2$$

Thus, the area of Square Park is 6400 m^2 .

Question 3. Find the breadth of a rectangular plot of land, if its area is 440 m^2 and the length is 22 m. Also find its perimeter.

Answer: Area of rectangular park = 440 m^2

$$\Rightarrow \text{Length} \times \text{breadth} = 440 \text{ m}^2$$

$$\Rightarrow 22 \times \text{breadth} = 440 \Rightarrow \text{breadth} = \frac{440}{22} = 20 \text{ m}$$

Now, Perimeter of rectangular park = 2 (length + breadth)

$$= 2 (22 + 20)$$

$$= 2 \times 42 = 84 \text{ m}$$

Thus, the perimeter of rectangular park is 84 m.

Chap 12

1. Add: $3mn$, $-5mn$, $8mn$, $-4mn$
2. Add: $a + b - 3$, $b - a + 3$, $a - b + 3$
3. Subtract: $(a - b)$ from $(a + b)$
4. Subtract: $a(b - 5)$ from $b(5 - a)$
5. If $m = 2$ then find the value of (i) $m - 2$ (ii) $3m - 5$ (iii) $9 - 5m$

Chap 13

1. Simplify and express each of the following in exponential form:

$$(i) \frac{2^3 \times 3^4 \times 4}{3 \times 32}$$

$$(ii) [(5^2)^3 \times 5^4] \div 5^7$$

$$(iii) \frac{7^2 \times 11^2 \times 3}{21 \times 11^3}$$

$$(iv) \left(\frac{a^5}{a^3}\right) \times a^8$$

Solve: Each carry three marks

1. The population of a city decreased from 25,000 to 24,500. Find the percentage decrease.

Answer: The population of a city decreased from 25,000 to 24,500.

$$\text{Population decreased} = 25,000 - 24,500 = 500$$

$$\text{Decreased Percentage} = \frac{\text{Population decreased}}{\text{Original population}} \times 100 = \frac{500}{25000} \times 100 = 2\%$$

Hence, the percentage decreased is 2%.

2. Arun bought a car for Rs. 3,50,000. The next year, the price went up to Rs. 3,70,000.

What was the percentage of price increase?

Answer: Increased in price of a car from Rs. 3,50,000 to Rs. 3,70,000.

Amount change = Rs. 3,70,000 – Rs. 3,50,000 = Rs. 20,000.

$$\text{Therefore, Increased percentage} = \frac{\text{Amount of change}}{\text{Original amount}} \times 100 \\ = \frac{20000}{350000} \times 100 = 5\frac{5}{7}\%$$

Hence, the percentage of price increased is $5\frac{5}{7}\%$.

3. Tell what is the profit or loss in the following transactions. Also find profit percent or loss percent in each case.

(a) Gardening shears bought for Rs. 250 and sold for Rs. 325.

(b) A refrigerator bought for Rs. 12,000 and sold for Rs. 13,500.

(c) A cupboard bought for Rs. 2,500 and sold for Rs. 3,000.

(d) A skirt bought for Rs. 250 and sold for Rs. 150.

Answer: (a) Cost price of gardening shears = Rs. 250

Selling price of gardening shears = Rs. 325

Since, S.P. > C.P., therefore here is profit.

$$\therefore \text{Profit} = \text{S.P.} - \text{C.P.} = 325 - 250 = \text{Rs. } 75$$

$$\text{Now Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100 = \frac{75}{250} \times 100 = 30\%$$

Therefore,

Profit = Rs. 75 and Profit% = 30%

(b) Cost price of refrigerator = Rs. 12,000

Selling price of refrigerator = Rs. 13,500

Since, S.P. > C.P., therefore here is profit.

$$\therefore \text{Profit} = \text{S.P.} - \text{C.P.} = 13500 - 12000 = \text{Rs. } 1,500$$

$$\text{Now Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100 = \frac{1500}{12000} \times 100 = 12.5\%$$

Therefore, Profit = Rs. 1,500 and Profit% = 12.5%

(c) Cost price of cupboard = Rs. 2,500

Selling price of cupboard = Rs. 3,000

Since, S.P. > C.P., therefore here is profit.

$$\therefore \text{Profit} = \text{S.P.} - \text{C.P.} = 3,000 - 2,500 = \text{Rs. } 500$$

$$\text{Now Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100 = \frac{500}{2500} \times 100 = 20\%$$

Therefore, Profit = Rs. 500 and Profit% = 20%

(b) Cost price of skirt = Rs. 250

Selling price of skirt = Rs. 150

Since, C.P. > S.P., therefore here is loss.

$$\therefore \text{Loss} = \text{C.P.} - \text{S.P.} = 250 - 150 = \text{Rs. } 100$$

$$\text{Now Loss\%} = \frac{\text{Loss}}{\text{C.P.}} \times 100 = \frac{100}{250} \times 100 = 40\%$$

Therefore, Profit = Rs. 100 and Profit% = 40%

4. (i) Chalk contains Calcium, Carbon and Oxygen in the ratio 10 : 3 : 12. Find the percentage of Carbon in chalk.

(ii) If in a stick of chalk, Carbon is 3 g, what is the weight of the chalk stick?

Answer: (i) Given ratio = 10 : 3 : 12

$$\text{Total part} = 10 + 3 + 12 = 25$$

$$\text{Part of Carbon} = \frac{3}{25}$$

$$\text{Percentage of Carbon part in chalk} = \frac{3}{25} \times 100 = 12\%$$

(ii) Quantity of Carbon in chalk stick = 3 g

Let

the weight of chalk be x g.

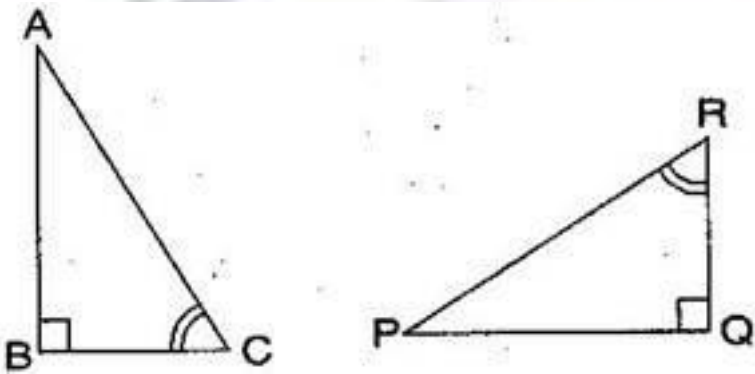
Then, 12% of $x = 3$

$$\Rightarrow \frac{12}{100} \times x = 3$$

$$\Rightarrow x = \frac{3 \times 100}{12} = 25 \text{ g}$$

Hence, the weight of chalk stick is 25 g.

5. If $\triangle ABC$ and $\triangle PQR$ are to be congruent, name one additional pair of corresponding parts. What criterion did you use?



Answer: $\triangle ABC$ and $\triangle PQR$ are congruent. Then one additional pair is $\overline{BC} = \overline{QR}$.

Given: $\angle B = \angle Q = 90^\circ$

$\angle C = \angle R$

$\overline{BC} = \overline{QR}$

Therefore, $\triangle ABC \cong \triangle PQR$ [By ASA congruence rule]

6. The length and breadth of a rectangular piece of land are 500 m and 300 m respectively.

Find:

(i) Its area. (ii) The cost of the land, if 1 m^2 of the land costs Rs. 10,000.

Answer:

Given: Length of a rectangular piece of land = 500 m and Breadth of a rectangular piece of land = 300 m

(i) Area of a rectangular piece of land = Length x Breadth

$$= 500 \times 300 = 1,50,000 \text{ m}^2$$

(ii) Since, the cost of 1 m^2 land = Rs. 10,000

Therefore, the cost of $1,50,000 \text{ m}^2$ land = $10,000 \times 1,50,000$

$$= \text{Rs. } 1,50,00,00,000$$

7. Find the area of a square park whose perimeter is 320 m.

Answer: Given: Perimeter of square park = 320 m

$$4 \times \text{side} = 320$$

$$\begin{aligned} \text{side} &= \frac{320}{4} \\ &= 80 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Now, Area of square park} &= \text{side} \times \text{side} \\ &= 80 \times 80 = 6400 \end{aligned}$$

Thus, the area of square park is 6400

8. Find if $z = 10$, find the value of $z^4 - 3(z - 10)$

9. If $p = -10$, find the value of $p^2 - 2p - 100$

10. Simplify:

$$(i) \frac{(2^5)^2 \times 7^3}{8^3 \times 7}$$

$$(ii) \frac{25 \times 5^2 \times t^8}{10^3 \times t^4}$$

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

$$\begin{aligned} \text{Answer: (i)} \frac{(2^5)^2 \times 7^3}{8^3 \times 7} &= \frac{2^{5 \times 2} \times 7^3}{(2^3)^3 \times 7} \\ &= \frac{2^{10} \times 7^3}{2^9 \times 7} \end{aligned}$$

$$= 2^{10-9} \times 7^{3-1} = 2 \times 7^2$$

$$= 2 \times 49$$

$$= 98$$

$$(ii) \frac{25 \times 5^2 \times t^8}{10^3 \times t^4} = \frac{5^2 \times 5^2 \times t^8}{(5 \times 2)^3 \times t^4}$$

$$= \frac{5^{2+2} \times t^{8-4}}{2^3 \times 5^3}$$

$$\frac{5^4 \times t^4}{2^3 \times 5^3}$$

$$\frac{5^{4-3} \times t^4}{2^3}$$

$$\frac{5t^4}{8}$$

$$(iii) \frac{3^5 \times 10^5 \times 25}{5^7 \times 6^5} = \frac{3^5 \times (2 \times 5)^5 \times 5^2}{5^7 \times (2 \times 3)^5}$$

$$\frac{3^5 \times 2^5 \times 5^5 \times 5^2}{5^7 \times 2^5 \times 3^5}$$

$$\frac{3^5 \times 2^5 \times 5^{5+2}}{5^7 \times 2^5 \times 3^5}$$

$$\frac{3^5 \times 2^5 \times 5^7}{5^7 \times 2^5 \times 3^5}$$

$$= 2^{5-5} \times 3^{5-5} \times 5^{7-7}$$

$$= 2^0 \times 3^0 \times 5^0$$

$$= 1 \times 1 \times 1$$

$$= 1$$

11. Find the breadth of a rectangular plot of land, if its area is 440 and the length is 22 m. Also find its perimeter.

Answer: Area of rectangular park = 440
length x breadth = 440
22 x breadth = 440

$$\text{breadth} = \frac{440}{22} = 20 \text{ m}$$

Now, Perimeter of rectangular park = 2 (length + breadth)
= 2 (22 + 20)

$$= 2 \times 42 = 84 \text{ m}$$

Thus, the perimeter of rectangular park is 84 m.

12. The perimeter of a rectangular sheet is 100 cm. If the length is 35 cm, find its breadth. Also find the area.

Answer: Perimeter of the rectangular sheet = 100 cm
2 (length + breadth) = 100 cm

$$2(35 + \text{breadth}) = 100$$

$$\begin{aligned} 35 + \text{breadth} &= \frac{100}{2} \\ 35 + \text{breadth} &= 50 \\ \text{breadth} &= 50 - 35 \\ \text{breadth} &= 15 \text{ cm} \end{aligned}$$

Now, Area of rectangular sheet = length x breadth
= 35 x 15 = 525 cm²

Thus, breadth and area of rectangular sheet are 15 cm and 525 respectively.

PAPER FORMATE

SECTION - A

- (i) Choose correct option [1 x 10 = 10]
- (ii) Fill the blank [1 x 10 = 10]
- (iii) Tell whether the statement is true or false: [1 x 10 = 10]
- (IV) Solve: Each carry one marks [1 x 10 = 10]

SECTION - B

Solve: Each carry two marks (Any four) [2 X 8= 16]

SECTION -C

Solve: Each carry three marks (Any one) [3 X 8 = 24]