ASSIGNMENT SA 2

Class –7 **CH – 7,8,9,11,12and 13** **Sub: MATHS**

Multiple Choice Questions: [1 MARK QUESTION]

Chap 7

1. Number of element of a triangle is
   a. 6 b.5 c. 4 d. 3
2. Two figures are said to be congruent, if they have exactly the same
   a. Area b. Perimeter c. Shape and size d. length and width
3. Two Triangles are congruent, if two angles and the side included between them in one of the triangle are equal to the two angle and the side included them of the Other triangle. This is known as the
   a.RHS congruence criterion c. ASA congruence criterion
   c. SAS congruence criterion d. AAA congruence criterion
4. By which of the following criterion, the two triangle cannot be proved congruent?
   a. AAA rule b. SSS rule c. SAS rule d. ASA rule
5. Which congruence Criterion do you use in the following? ASA rule SSS RHS SAS

Chap 8

1. Which of the following is the ratio of 3 kilometres to 300 metre?
   a. 10:1 b. 1:10 c. 100:1 d. 1:100
2. If 5: x = 3:4, then what will be the value of x?
   a. 3/20 b. 15/4 c. 20/3 d. 4/15
3. The ratio of Fatima's income to her saving is 4:1. The percentage of money saved by her is
   a. 20 % b. 25% c.40% d. 80%
4. The interest on 30000 for 3 years at the rate of 15% per annum is.
   a. Rs 4500 b. Rs 9000 c. Rs 18000 d. Rs 13500
5. The sum which will earn a simple interest of rupees 126 in 2 years at 14% per annum is
   a. Rs 394 b. Rs 395 c. Rs 450 d. Rs 540

Chap 9

1. Which of the following rational number is positive ?
   a. -8/7 b. 19/-13 c. -3/-4 d. -21/13
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. $(x + y)^5$ d. $(x + y)^{10}$

2. In standard form, then number 829030000 is written as k X 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) X (- 2)^0 X (- 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 70^0, the measure of the Other angle is _____
   Answer: 70^0
3. When we write ∠ A = ∠ B ,we actually means _____
   Answer:
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: $\left(\frac{-3}{4}\right)$

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

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

Chap – 11

1. 1 hector is equal to ……m^2
Answer: 10000
2. If the perimeter of an equilateral triangle is 9 cm. then, its area is ……cm^2.
Answer: 3.89 cm^2
3. The diameter of a circle is 4cm.then its area is …….cm^2.
Answer: 12.57 cm^2
4. The area of a rectangle is 200cm^2 .if its breadth is 20 cm, then its length is …….cm.
Answer: 10 cm
5. If area of a triangular piece of a cardboard is 90cm^2 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 2πr, 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 = ------x 10^4
Answer: 888880
4. 340900000 = 3.409 x 10
Answer: 8
5. $a^m \; x \; a^n = a$
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 F
2. If the hypotenuse of another right angle triangle, then the Triangles are congruent. F
3. If three angles of a triangle are equal to the corresponding angles of another triangle , then the Triangles are congruent T
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. .F
2. When an improper fraction is converted into percentage, Then the answer can also be less than 100 .F
3. The interest on rupees 350 at 5% per annum for 73 days is rupees 35 . F
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. $\left(\frac{7}{5}\right)^3 x \left(\frac{5}{7}\right)^3 = \left(\frac{7}{5}\right)^0$ (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. Δ PQR ≅ ΔBCA. 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. Δ PQR ≅ ΔBCA. 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) 1/8 (b) 5/4 (c) 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) $\frac{3}{4}$ x $\frac{-2}{3}$

2. $\frac{-6}{7}=\frac{}{42}$

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 x 192 (ii) 56 x 84

5. Express the numbers in standard form.

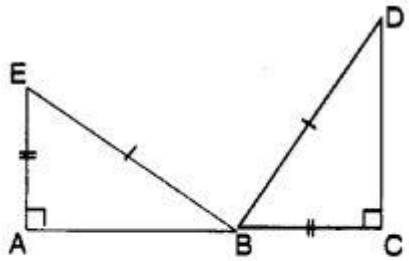
(i) 5, 00, 00,000 (ii) 3,18,65,00,000

Solve: Each carry two marks:

Chap – 7

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

(a)



Given: EB = DB

AE = BC

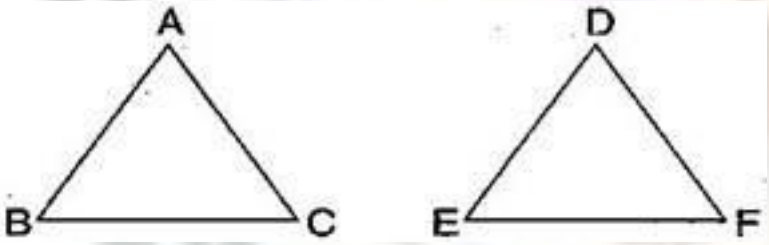
$\angle A = \angle C = 90°$

So, $\Delta ABE \cong \Delta CDB$

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

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

So $\Delta ABC \cong \Delta DEF$



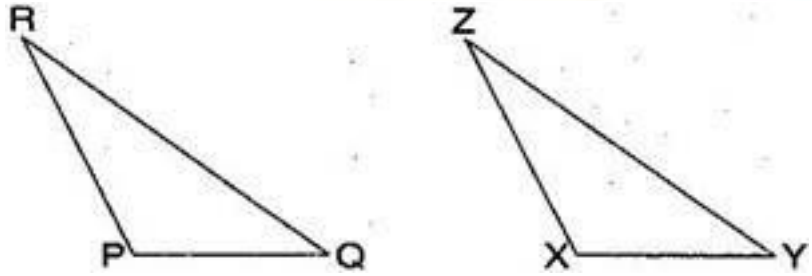
Answer: (a) By SSS congruence criterion, since it is given that AC = DF, AB = DE, BC = EF

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

Therefore, $\Delta ABC \cong \Delta$ DEF

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

$\Delta PQR \Delta XYZ$



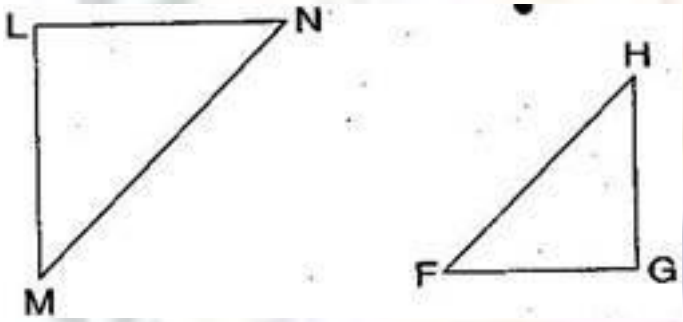
Answer:
(b) By SAS congruence criterion, since it is given that RP = ZX, RQ = ZY and ∠PRQ= ∠XZY

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

Therefore, $\Delta PQR \cong \Delta XYZ$

(c) Given: ∠MLN = ∠FGH, ∠NML = ∠HFG, ML = FG

So $\Delta LMN \cong \Delta GFH$



Answer: By SAS congruence criterion, since it is given that RP = ZX, RQ = ZY and ∠PRQ= ∠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, $\Delta PQR \cong \Delta XYZ$

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

Steps	**Reasons**
1. PM = QM	**1. _____**
2. ∠PMA = QMA	**2. _____**
3. AM = AM	**3. _____**
4. ΔAMP ΔAMQ	**4. _____**

$\cong$

Answer:

Steps	Reasons
1. PM = QM	1. Given
2. $\angle$PMA = $\angle$QMA	2. Given
3. AM = AM	3. Common
4. ΔAMP $\cong$ ΔAMQ	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 litters

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 = Rs. 1080

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

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

(c) 40% of x = 500 km

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

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

(d) 70% of x = 14 minutes

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

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

(e) 8% of x = 40 liters

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

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

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

Now, Amount = Principal + Simple Interest = 1200 + 432 = Rs. 1,632

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

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

Now, Amount = Principal + Simple Interest = 7,500 + 1,125 = Rs. 8,625

Chap 9

6. Find thesum:

(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) $\frac{5}{3}+\frac{3}{5}=\frac{5\times5}{3\times5}+\frac{3\times3}{5\times3}=\frac{25}{15}+\frac{9}{15}$

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

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

(iii) $\frac{-9}{10}+\frac{22}{15}=\frac{-9\times3}{10\times3}+\frac{22\times2}{15\times2}=\frac{-27}{30}+\frac{44}{30}$

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

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

(iv) $\frac{-3}{-11}+\frac{5}{9}=\frac{-3\times9}{-11\times9}+\frac{5\times11}{9\times11}=\frac{27}{99}+\frac{55}{99}$ [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) $\frac{7}{24}-\frac{17}{36}=\frac{7\times3}{24\times3}-\frac{17\times2}{36\times2}=\frac{21}{72}-\frac{34}{72}$

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

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

(ii) $\frac{5}{63}-\left(\frac{-6}{21}\right)=\frac{5\times1}{63\times1}-\left(\frac{-6\times3}{21\times3}\right)=\frac{5}{63}-\frac{-18}{63}$ [L.C.M. of 63 and 21 is 63]

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

(iii) $\frac{-6}{13} - \left(\frac{-7}{15}\right) = \frac{-6\times15}{13\times15} - \left(\frac{-7\times13}{15\times13}\right) = \frac{-90}{195} - \left(\frac{-91}{195}\right)$ [L.C.M. of 13 and 15 is 195]

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

(iv) $\frac{-3}{8} - \frac{7}{11} = \frac{-3\times11}{8\times11} - \frac{7\times8}{11\times8} = \frac{-33}{88} - \frac{56}{88}$

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

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

(v) $-2\frac{1}{9} - 6 = \frac{-19}{9} - \frac{6}{1} = \frac{-19\times1}{9\times1} - \frac{6\times9}{1\times9}$ [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:

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

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

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

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

Answer: (i) $\frac{9}{2} \times \left(\frac{-7}{4}\right) = \frac{9\times(-7)}{2\times4} = \frac{-63}{8} = -7\frac{7}{8}$

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

(iii) $\frac{-6}{5} \times \frac{9}{11} = \frac{(-6)\times9}{5\times11} = \frac{-54}{55}$

(iv) $\frac{3}{7} \times \left(\frac{-2}{5}\right) = \frac{3\times(-2)}{7\times5} = \frac{-6}{35}$

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) $\frac{-3}{5} \div 2 = \frac{-3}{5} \times \frac{1}{2} = \frac{(-3)\times1}{5\times2} = \frac{-3}{10}$

(iii) $\frac{-4}{5} \div (-3) \quad \frac{(-4)}{5} \times \frac{1}{(-3)} = \frac{(-4)\times1}{5\times(-3)} = \frac{4}{15}$

(iv) $\frac{-1}{8} \div \frac{3}{4} \quad \frac{-1}{8} \times \frac{4}{3} \quad \frac{(-1)\times1}{2\times3} = \frac{-1}{6}$

(v) $\frac{-2}{13} \div \frac{1}{7} \quad \frac{-2}{13} \times \frac{7}{1} = \frac{(-2)\times7}{13\times1} = \frac{-14}{13} = -1\frac{1}{13}$

(vi) $\frac{-7}{12} \div \left(\frac{-2}{13}\right) \quad \frac{-7}{12} \times \frac{13}{(-2)} \quad \frac{(-7)\times13}{12\times(-2)} = \frac{-91}{24} = 3\frac{19}{24}$

(vii) $\frac{3}{13} \div \left(\frac{-4}{65}\right) \quad \frac{3}{13} \times \frac{65}{(-4)} = \frac{3\times(-5)}{1\times4} = \frac{-15}{4} = -3\frac{3}{4}$

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

=500x300=1,50,000 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

= 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 x side = 320

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

Now, Area of square park = side x side

=80x80=6400 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

$\Rightarrow$Length x breadth = 440 m^2

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

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

= 2 (22 + 20)

= 2 x 42 = 84 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) $(\frac{a^5}{a^3}) \times a^8$

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.

Population decreased = 25,000 – 24,500 = 500

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.

Therefore, Increased percentage = $\frac{\text{Amount of change}}{\text{Original amount}} \times 100$

$= \frac{20000}{350000} \times 100 \quad 5\frac{5}{7}\%$

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.

$\therefore$ Profit = S.P. – C.P. = 325 – 250 = Rs. 75

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

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.

$\therefore$ Profit = S.P. – C.P. = 13500 – 12000 = Rs. 1,500

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

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.

$\therefore$ Profit = S.P. – C.P. = 3,000 – 2,500 = Rs. 500

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.

$\therefore$ Loss = C.P. – S.P. = 250 – 150 = Rs. 100

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

Total part = 10 + 3 + 12 = 25

Part of Carbon = 3/25

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.

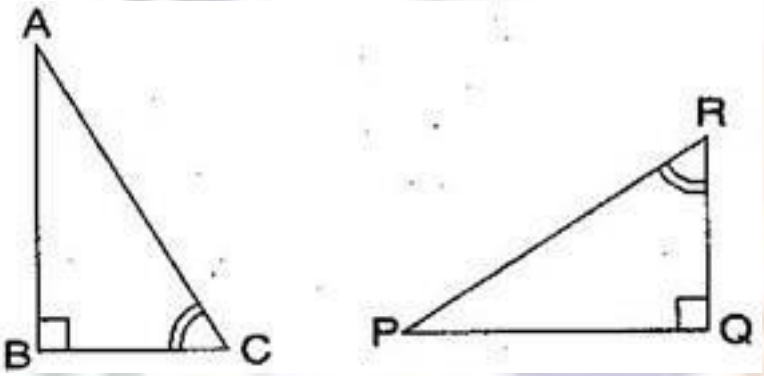
Then, 12% of x = 3

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

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

Hence, the weight of chalk stick is 25 g.

5. If ΔABC and ΔPQR are to be congruent, name one additional pair of corresponding parts. What criterion did you use?



Answer: ΔABC and ΔPQR 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, $\Delta ABC \cong \Delta$ 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 x 300 = 1,50,000 m^2

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

Therefore, the cost of 1,50,000 m2 land = 10,000 x 1,50,000

= 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 x side = 320

side = $\frac{320}{4}$

= 80 m

Now, Area of square park = side x side

= 80 x 80 = 6400

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

Answer: (i) $\frac{(2^5)^2 \times 7^3}{8^3 \times 7} = \frac{2^{5\times2} \times 7^3}{(2^3)^3 \times 7}$

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

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

= 2 x 49

= 98

(ii) $\frac{25 \times 5^2 \times t^8}{10^3 \times t^4} = \frac{5^2 \times 5^2 \times t^8}{(5\times2)^3 \times t^4}$

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

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

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

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

(iii) $\frac{3^5 \times 10^5 \times 25}{5^7 \times 6^5} = \frac{3^5 \times (2\times5)^5 \times 5^2}{5^7 \times (2\times3)^5}$

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

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

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

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

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

= 1 x 1 x 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

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

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

= 2 (22 + 20)

= 2 x 42 = 84 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 + breadth) = 100

$35 + \text{breadth} = \frac{100}{2}$

35 + breadth = 50

breadth = 50 – 35

breadth = 15 cm

Now, Area of rectangular sheet = length x breadth

= 35 x 15 = 525 cm^2

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

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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]**