DAV NUPPL Public School
NUPPL Township, Ghatampur, Kanpur Nagar, UP-209206

Assignment: Half yearly **Class :VII**
Subject: Mathematics **Session: 2024-25**

Chapter - Application of percentage

Q1. Choose the correct option:-

1) 33% in decimal form is
   (a) 9 (b) 0.33 (c) 1 (d) 0
2) 0.2 in percent form is
   (a) 20% (b) 200% (c) 1% (d) 12%
3) The value of 35% of 500gm is
   (a) 35 (b) 0 (c) 175 (d)100
4) 25% in lowest form is
   (a) 1 (b) $\frac{5}{9}$ (c) 0 (d) $\frac{1}{4}$
5) $\frac{1}{5}$ in percent form is
   (a) 20% (b) 1% (c) 55% (d) 0%

Q2. Fill in the blanks :-

(a) A fraction with denominator 100 is called .....
(b) Amount = ... + Interest
(c) Profit = Selling Price - .....
(d) Simple interest = Principal× Rate of Interest × .....
(e) Loss = Cost Price - ……..

Q3. Mr Virmani saves 12% of his salary. If he receives Rs 15900 per month as salary, find his monthly expenditure.

Q4. Rajdhani College has 2400 students, 40% of whom are girls. How many boys are there in the college?

Q5. Naresh bought 4 dozen pencils at Rs 10.80 a dozen and sold them for 80 paise each. Find his gain or loss percent.

Q6. Find the gain or loss percent, when:
(i) Cost Price = Rs 2300, Overhead expenses = Rs 300 and gain = Rs 260.
(ii) Cost Price= Rs 3500, Overhead expenses = Rs 150 and loss = Rs 146

Q7. A floweriest buys 100 dozen roses at Rs 2 a dozen. By the time the flowers are delivered, 20 dozen roses are mutilated and are thrown away. At what price should he sell the rest if he needs to make a 20% profit on his purchase?

Q8. By selling an article for Rs 240, a man makes a profit of 20%. What is his Cost Price? What would his profit percent be if he sold the article for Rs 275?

Q9. Rohan borrowed Rs.10,000 from a bank at 7% interest per annum for 3 years and Mohan borrowed Rs. 10,000 from another bank at 6%interest per annum for 4 years. Find their interests, also find the amounts they will return to the bank.

Q10. Mr. Lal took a loan of Rs.10,000 from bank at 7% per annum and purchased a cow for Rs.7,500. After 3years he returned the principal only. How much money he has to pay more to the bank?

Q11. Answer the case study based question:-
In a survey it was found that out of 125 people in a park,12% jog, 16% do yoga and rest prefer to walk. Answer the following from above information:-

(a) Find the number of people who prefer to walk.
(b) Find the number of people who prefer to jog
(c) How much percentage of people prefer to do yoga?

OR

How much percentage of people prefer to walk?

Q12. Assertion and Reason question:-

(a) Assertion: Interest is the amount of money paid for a loan or an investment.
Reason: The principal is the amount of money borrowed or invested

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
(iii) Assertion is true but Reason is false
(iv) Assertion is false but Reason is true.

b) **Assertion:** The amount that the buyer pays to buy the product is called the selling price
Reason: If Vishu sold the same book for Rs25, then Rs25, is considered the book's selling price.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
(iii) Assertion is true but Reason is false
(iv) Assertion is false but Reason is true.

Chapter - Triangle and its properties

Q1. Choose the correct option:-

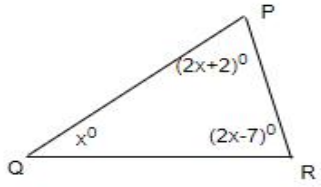
1) In a right angle triangle, the longest side is
   (a) base (b) hypotenuse (c) height (d) perpendicular
2) In an isosceles triangle, the angles opposite to equal sides are
   (a) greater (b) smaller (c) zero (d) equal
3) In a right triangle, orthocentre is at
   (a) vertex (b) inside (c) outside (d) nowhere
4) Medians of a triangle are
   (a) concurrent (b) small (c) big (d) zero
5) The point of concurrence of the perpendicular bisectors of the side of the triangle is called
   (a) altitude (b) bisector (c) straight (d) circumcentre

Q2. Answer the following :-

(a) The ..... of a side of a triangle is the line that bisects the side and is perpendicular to it.
(b) The centroid of a triangle divides each median in the ratio of .....
(c) The point at which the altitudes of a triangle meet, is called the ..... of the triangle.
(d) Sum of the angles of a triangle is .....
(e) The point at which the three angle bisectors of a triangle meet, is called its .....

Q3. If the angles of a triangle are in the ratio 1: 2: 3, determine three angles.

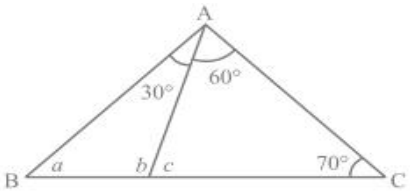
Q4. From the adjoining figure, find the value of x and also the measures of ∠P, ∠Q and ∠R



Q5. One of the angles of a triangle is 130°, and the other two angles are equal. What is the measure of each of these equal angles?

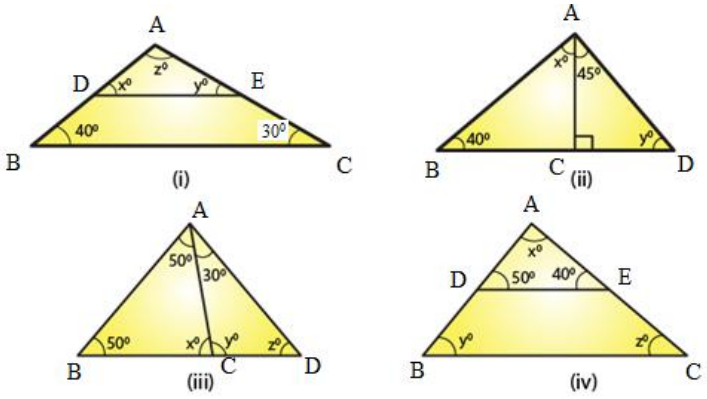
Q6. The angles of a triangle are $(x - 40)^o$, $(x - 20)^o$ and $(\frac{1}{2} - 10)^o$. Find the value of x.

Q7. Find the value of a, b and c in the below figure:

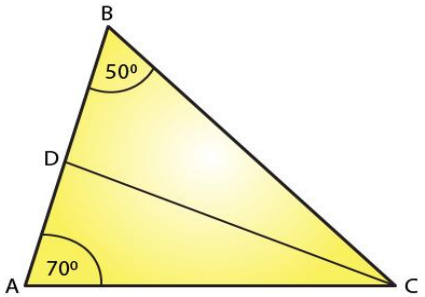


Q8. If one angle of a triangle is 100° and the other two angles are in the ratio 2: 3. Find the angles.

Q9. Find x, y, z from the figures given below:



Q10. In △ABC, ∠A = 50°, ∠B = 70° and bisector of ∠C meets AB in D. Find the angles of the triangles ADC and BDC



Q11. Assertion and Reason question:-

(a) **Assertion:** The angles of a triangle which are in the ratio 3:4:5 are 40°, 60°, 75° respectively.
Reason: Sum of the angles of a triangle is 180°

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

(b) **Assertion:** Two sides of a triangle are of lengths 5 cm and 1.5 cm. The length of the third side of the triangle cannot be 3.4

Reason: the difference between the two sides of a triangle should be less than the third side.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

Q12. Answer the case study based question:-

Due to storm and rain a tree broke and fell on the road which prevented the people and vehicles to pass by. A group of children decided to solve the problem. They lifted the broken part and put it aside. All were very thankful to these brave children.

(a) If the width of the road was 12m and length of the broken part removed was 13m, what was the height of the tree?

(b) If the height of the tree is 4m and width of the road is 3m, then find the length of the broken part of the tree?

(c) Check whether 5, 12, 13 is a Pythagorean triplet or not.

OR

Write the formula for Pythagorean triplets.

Chapter - Construction of triangles

Q1 Fill in the blanks:

(i) A triangle can be drawn if the _____ and a leg in the case of a right-angled triangle.

(ii) We can draw _____ line (s) parallel to a given line.

(iii) The number of line (s) that can be drawn parallel to a given line through a given point not on the line is _____.

(iv) A triangle can be drawn only when the sum of any two sides of the triangle is _____ than third side.

(v) Construction of a triangle is not possible if three _____ of a triangle are given.

Q2 Draw a triangle PQR in which PQ = 3 cm, QR = 4 cm, RP = 5 cm. Also draw perpendicular bisector of side PQ.

Q3 Construct a triangle PQR with PQ=6cm, QR=7cm and PR=8cm. Using ruler and compasses only

Q4 Draw an isosceles triangle in which each of the equal sides is of length 3 cm and the angle between them is 45^o.

Q5 Draw a triangle whose sides are of lengths 4 cm, 5 cm and 7 cm. Draw the perpendicular bisector of the largest side.

Q6 Draw $\triangle ABC$ in which AB = 3 cm, BC = 5 cm and $\angle B = 70^o$.

Q7 Draw $\triangle DEF$ such that DE= DF= 4 cm and EF = 6 cm. Measure $\angle E$ and $\angle F$.

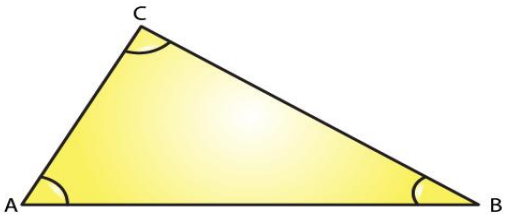
Q8 Draw a triangle ABC in which BC = 4 cm, AB = 3 cm and $\angle B = 45^o$. Also, draw a perpendicular from A on BC.

Q9 Construct ΔABC in which BC = 4 cm, ∠B = 50° and ∠C = 70°.

Q10 Draw a right triangle having hypotenuse of length 5.4 cm, and one of the acute angles of measure 30°

Q11 Answer the case study based question:-

Take three non-collinear points A. B and C on a page of your notebook. Join AB, BC and CA. What figure do you get? Name the triangle. Also, name



(i) The side opposite to ∠B

(ii) The angle opposite to side AB

(iii) The vertex opposite to side BC

OR

The side opposite to vertex B.

Q12 Assertion and Reason question:-

a) **Assertion:** ABC is an equilateral triangle, then each angle equals to 60°
Reason: Equilateral triangle has all its sides equal and each angle measures 60°.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

b) **Assertion:** Two sides of a triangle are of lengths 5 cm and 1.5 cm. The length of the third side of the triangle cannot be 3.4
Reason: the difference between the two sides of a triangle should be less than the third side.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

Chapter – Rational number as decimals

Q1.Choose the correct option:-

1) Decimal form of $-\frac{2}{25}$ is

(a) 1.11 (b) $\frac{5}{9}$ (c) 0.08 (d) $\frac{1}{4}$

2) Standard form of 7.5 is

(a) $\frac{15}{2}$ (b) $\frac{5}{9}$ (c) 0 (d) $\frac{1}{4}$

3) Sum of 2.3 and 2.33 is

(a) 12 (b)9.11 (c) 4.63 (d) 5.45

4) Decimal form of $\frac{2}{10}$ is

(a) 2.0 (b)0.2 (c) 0 (d) $\frac{1}{4}$

5) Express 0.4 in $\frac{p}{q}$ form

(a) 1 (b) $\frac{5}{9}$ (c) 0 (d) $\frac{1}{4}$

Q2. Without actual division, check which rational number has terminating or non – terminating decimal representation :-

a) $\frac{52}{9}$

b) $\frac{975}{100}$

c) $\frac{4637}{73}$

d) $\frac{9999}{250}$

e) $\frac{2}{8}$

Q3. Express the following in standard form:- (a) -0.052 (b) 22.5

Q4. Add : (a) 99.12, 607.987, 0.2526 (b) 636.23, 123.001, 0.0067

Q5. Find the product : (a) 23.9 × 11.62 (b) 11.11 × 56.02

Q6. Simplify : (a) $\frac{2}{5} \times \frac{3}{4} + \frac{1}{25} \times \frac{1}{2} - \frac{2}{10} \times \frac{1}{5}$ (b) 73.2 + 12.415 – 0.98 – 8.59

Q7. Divide : (a) 51.51 ÷ 0.17 (b) 0.2472 ÷ 0.8

Q8. Evaluate:- $21.5 \div 5 - \frac{1}{5}$ of $(20.5 - 5.5) + 0.5 \times 8.5$

Q9. Mr. Ranjan purchased 15.500 kg rice, 25.750 kg flour and 3.250 kg sugar. Find the total weight of his purchases. Is it 50 kg or less? If less, how much less?

Q10. Write each of the following rational numbers in the standard form:

(i) $(\frac{-8}{36})$ (ii) $(\frac{299}{-161})$ (iii) $(\frac{-63}{-210})$ (iv) $(\frac{-195}{275})$

Q11. Answer the case study based question:-

Raman had to cover a distance of 30km to reach his grandmother house. He covered 11.25 km by bus, 7.083km by auto and rest by foot.

Answer the following from the above information:-

a) How much distance did Raman cover by foot?

b) How much distance did Raman cover by bus and auto?

c) How much distance he cover by bus in meters?

OR

If his grandmother house is 50km away, then how much distance will he cover by foot?

Q12. Assertion and Reason question:-

(a) **Assertion:** Manish deposits Rs 2000 in his bank account and withdraws Rs 1000 on the next day. Then the balance in Manish's account after the withdrawal is Rs 1000.
Reason: 2000 – 1000 = Rs 1000.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

(b) **Assertion:** To multiply a decimal number by 10, we move the decimal point in the number to the right by as many places as many zeros are at the right of one.
Reason: 3.2 × 10 = 0.32.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
(iii) Assertion is true but Reason is false
(iv) Assertion is false but Reason is true.

Chapter – Data handling

Q1. Choose the correct option:-

1) Pictorial representation of data using symbol is known as
   (a) pictograph (b) histogram (c) linear graph (d) bar graph
2) The mean of the numbers 10,20,30 and 40 is
   (a) 66 (b) 25 (c) 40 (d) 35
3) Mode of 2,3,4,5,3,2,2 is
   (a) 2 (b) 3 (c) 4 (d) 5
4) Median of 1,2,3,4,5,6,7,8,9 is
   (a) 2 (b) 6 (c) 9 (d) 5
5) The mean of first five whole numbers is
   (a) 2 (b) 6 (c) 9 (d) 5

Q2. Answer the following :-

a) Range = Highest observation - …….
b) …….. is the value of the given number of observations which divides it into exactly two parts.
c) Mean of a number of observation is the sum of the observations divided by the ……..
d) …….. is the observation which occurs maximum number of times.
e) …….. is a collection of numbers gathered to give some information.

Q3. Find the mode of this observation: 75, 14, 88, 17, 48, 14, 25, 17,14

Q4. Find the mean and median of first five prime numbers.

Q5 Find the mean of 23,22,34,56,67,43,55

Q6. The mean of marks scored by 100 students was found to be 40. Later on it was discovered that a score of 53 was misread as 83. Find the correct mean.

Q7. The following table shows the interest paid by a company (in lakhs):

Year	1995-96	1996-97	1997-98	1998-99	1999-2000
Interest(In lakhs of rupees)	20	25	15	18	30

Draw the bar graph to represent the above information.

Q8. Find the mean of x, x + 2, x + 4, x + 6, x + 8

Q9. The final marks in Mathematics of 20 students are as follows:

53, 61, 48, 60, 98, 68, 55, 100, 67, 98
44, 98, 52, 64, 98, 59, 70, 39, 50, 60

(i) Find the mean.
(ii) Find the median.
(iii) What is the range?
(iv) If 40 is the pass mark how many have failed?

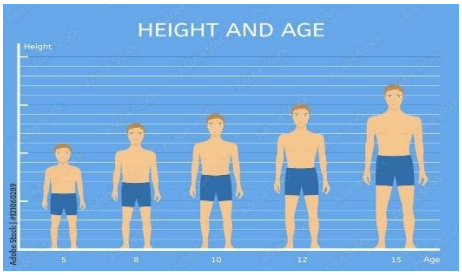
Q10. The performance of students in 1st term and 2nd term is as given below. Draw a double bar graph choosing appropriate scale, and answer the following:

Subject	English	Hindi	Maths	Science	Social science
First Term	67	72	88	81	73
Second Term	70	65	95	85	75

(i) In which subject, has the children improved their performance the most?
(ii) Has the performance gone down in any subject?

Q11. Answer the case study based question:-

The heights of ten boys were measured in centimetres and the results were as follows:
143, 132, 149, 148, 151, 146, 135, 128, 139, 150



Answer the following from the above information:-

(i) What is the maximum and minimum height?

(ii) What is the range of the data?

(iii) Find the mean height.

OR

How many boys are there whose heights are less than the mean height?

Q12. Assertion and Reason questions:-

a) **Assertion :** The mode of a set of observations is the observation that occur most often.
Reason : Given set of numbers 1,1,2,2,2,2,3,4,4

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.

b) **Assertion**: Mean is sum of all observations divided by number of observations.
Reason: Mean = (12 + 34 + 45 + 50 + 24) / 5 = 165 / 5 = 33.

(i) Both Assertion and Reason are true and Reason is the correct explanation of Assertion

(ii) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion

(iii) Assertion is true but Reason is false

(iv) Assertion is false but Reason is true.