DELHI PUBLIC SCHOOL, Durgapur
QUESTION BANK &REVISION SHEET
PERIODIC ASSESSMENT II
CLASS VII (Mathematics)

Rational Numbers

1. Express $\frac{5}{8}$ as a rational number with numerator i) 15 ii)-20
2. Represents the following numbers on the number line: $a)\frac{-1}{4}, b)-1\frac{1}{5}, c)-3\frac{5}{8}, d)\frac{-7}{10}, e)-5\frac{3}{5}$
3. Arrange the following numbers in ascending and descending order

   i) $-\frac{4}{9}, \frac{-5}{12}, \frac{7}{-18}, \frac{-2}{3}$ ii) $-\frac{5}{6}, \frac{-7}{12}, \frac{13}{-28}, \frac{-23}{24}$
4. Find five rational numbers between i) -3 and -2 ii) $\frac{-3}{5} and \frac{-1}{2}$
5. Evaluate: i) $\frac{-16}{9}+\frac{5}{-12}+\frac{7}{18}$ ii) $-1+\frac{7}{-9}+\frac{11}{12}$ iii) $-\frac{9}{11}+\frac{-1}{2}+\frac{-1}{-5}$
6. What should be added to $\frac{-3}{8}$ to get $\frac{5}{12}$?
7. The sum of two rational numbers is $\frac{-4}{3}$. If one of them is -5, find the other.
8. Simplify: (i) $(\frac{13}{8}\times\frac{12}{13})+(\frac{-4}{9}\times\frac{3}{-2})$ ii) $(\frac{-12}{7}\times\frac{-14}{27})-(\frac{-8}{45}\times\frac{9}{16})$
9. A bus is moving at an average speed of $46\frac{2}{3}$ km/h. How much distance will it cover in $2\frac{2}{5}$ hours?
10. By what number should $\frac{-44}{9}$ be divided to get $\frac{-11}{3}$?
11. How many pieces, each of length $3\frac{3}{4}$ m, can be cut from a rope of length 30m?
12. The cost of $2\frac{1}{2}$ metres of cloth is Rs $78\frac{3}{4}$. Find the cost of cloth per metre.

LINEAR EQUATION IN ONE VARIABLE

1. SOLVE:

   i) t-(2t+5)-5(1-2t) =2(3+4t)-3(t-4) ii) $\frac{3x-1}{5}-\frac{x}{7}=3$; iii) $\frac{y-1}{3}-\frac{y-2}{4}=1$

   iv) $\frac{x+2}{6}-(\frac{11-x}{3}-\frac{1}{4})=\frac{3x-4}{12}$ v) $\frac{9x+7}{2}-(x-\frac{x-2}{7})=36$ vi) 0.3x+0.4=0.28x+1.16
2. Find 3 odd consecutive numbers whose sum is 27.
3. If the smaller of two consecutive odd integers is doubled, the result is 7 more than the larger integer. Find the two integers.
4. A number is as much greater than 21 as it is less than 71. Find the number.
5. The sum of ages of father and son is 75 years. If the age of the son is 25 years, find the age of father.
6. Find the multiple of 8, if the sum of two consecutive multiples of 8 is 184.
7. If two complementary angles differ by 20°, find the measure of each angle.
8. The angles of a triangle are $(3x)°$; $(2x + 60)°$ and $(5x - 40)°$. Find each angle.
9. When the smaller of two consecutive integers is added to three times the larger integer the result is 43. Find both the numbers.
10. The age of father is 30 years more than that of his son. 5 years hence father's age will be thrice of his son's age, find the present ages

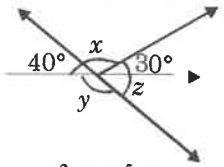
11. The numerator of a rational number is 7 less than the denominator. The denominator is increased by 9 and the numerator is also increased by 2, we again get the same rational number. Determine the number.
12. The sum of present ages of Sameer and his father is 54 years. 6 years ago, his father was 6 times as old as his son. Find their present ages
13. The combined cost of a T.V. and a fan is Rs. 13000. The cost of T.V. is 2 times the cost of the fan. Find the cost of each.
14. After 12 years, Manoj will be 3 times as old as he was 4 yrs ago. What is his present age?
15. The age of Nishant and Sanjay are in the ratio 4 : 5. Ten years hence the ratio of their ages will 6:7. Find their present ages

COMPARING QUANTITIES

1. Find the ratio in the simplest form
   i) 3 kg to 12 kg ii) 80 paise to Rs. 2 iii)12.8 m to 3.2 m.
2. Find equivalent ratio for each of the following: (a) 2 : 5 (*b*) 4 :16
3. The first three terms of a proportion are 2, 3, and 6. Find the fourth term.
4. Which ratio is greater: (*i*) 15: 18 or 24: 27 (*ii* 15: 27 or 32: 40
5. Find the cost of 10 pencils, if cost of 6 pencils is Rs. 72.
6. What number must be subtracted from each of the number 23, 40, 57and 108 so that the remainder are in proportion.
7. If 25, 35, x are in continued proportion, find the value of x.
8. Find the mean proportion between a) 6 and 24 b) 0.9 and 0.4
9. Arrange the ratios (5:6), (7:10), (13:15) and (23: 30) in ascending order.
10. If x: y =3:4, find (3x+4y): (5x +6y) .
11. If 2.5 litres of milk cost Rs 42.5 ,how much milk will cost Rs 595.
12. If 16 women can weave 72 metres of cloth in a day ,how many metres of cloth can be woven by 5 women in a day?
13. If 8 toys cost Rs 216 ,how much would 15 toys cost ?
14. If 15 men can pack 540 parcel per day,how many men are needed to pack 396 parcel per day ?
15. A man earns Rs 18000 in 3 months
    a) How much time would he take to earn Rs 30000 ?
    b) How much money will he earn in 7 month ?

LINES AND ANGLES

1. Find supplement of the following angles : (*a*)105°(*b*)87°(*c*)154°
2. Identify which of the following pair of angles are complementary and which are supplementary: (*a*)63°, 117°(*b*) 23°, 67°(*c*) 105°, 75° (*d*) 120°, 60°.
3. Two supplementary angles are in the ratio 3: 7, find the angles.
4. Two complementary angle are in the ratio 2 : 3, find the angles.
5. Find the angle which is half of its complementary angle.
6. Find the angle which is one third of its supplementary angle.
7. Find the angle which is equal to its supplement.
8. Two angles of a linear pair are in the ratio 2 : 7, find the angles.
9. Find the angle which is equal to its complement.
10. An angle is greater than 30° than its complement. What the measurement of complementary angles?
11. An angle is equal to 5 times its complement. Determine its measure.
12. An angle is equal to 8 times its supplement. Determine its measure.
13. An angle is greater than 60° than its supplementary angle. What is the supplementary angle?
14. Determine the value of x, y and z in the following figure.



ALGEBRAIC EXPRESSION

1. Write down the degree of the following polynomials :

a) $x - 6x + x$ b) $3 - 2x$ c) -2 d) $1 - x$ e) $3x^2 - 5xy^2 + 7$ f) $7 - 2x^3 - 5xy^3 + 9y^5$

2) Add the following algebraic expression :
a) $5x^3 -3x +7$,$2x^2-11$ and $7x^3-11x^2 +4x-3$
b) 2a -3b +4c,-3a +2b-5c ,7a –c and 3b+6c
c) 5m-7n ,3n -4m +2,2m-3mn -5

3) Subtract : a) $-5y^2$ from y^2 b) a(b-5) from b(5-a) c) $-m^2+5mn$ from 4m -3mn +8
d) $4pq -5q^2-3p^2$ from $5p^2 +3q^2 -pq$ e) $2x^4 -7x^2+5x +3$ from $x^4 -3x^3 -2x^2 +3$
4. Subtract p -2q +r from the sum of 10p –r and 5p+2q .
5. What should be added to $x^2-y2 +2xy$ to obtain $x^2 +y^2 +5xy$?
6.If a= 2 ,b=-2 ,find the value of: a) $a^2 +b^2$ b) $a^2 +ab +b^2$ c) $a^2 -b^2$

7.Simplify : a) $5x^4 -7x^2+8x -1+3x^3 -9x^2 +7 -3x^4+11x -2 +8x^2$.
b) $3xy^2-5x^2y+7xy -8xy^2-4xy+6x^2y$.
8.If a =3 ,b= -1 then find the value of the following :
a) a^b b) b^a c) $(ab)^b$ d) $(a+b)^b$ $(a/b +b/a)^b$

PERCENATGE
1. 15% of a number is 45 . Find the number.
2 .Convert the following percentages to decimal: a) 28% b) 0.44% c) $37\frac{1}{2}$ %
3. Convert the following decimals to percent : a) 0.65 b) 2.1 c) 0.02
4 .A teacher earns Rs 20000 a month. If he earns a raise of 15% , find his new monthly income.
5. Express a) 20 as a percent of 50 b) 350 gm as percentage of 5.5 kg
6. The price of a shirt decreased from Rs 80 to Rs 60 , find the percentage of decrease in the price of the shirt.
7.16% of the apples in a basket go bad. If there are 42 good apples in the basket ,find the total number of apples in the basket.
8. On a rainy day , 94% of the students were present in a school .If the number of students absent On that day was 174 , find the total strength of the school.
9. Convert the following percentages into ratios in simplest form:
a) 14% b) $1\frac{3}{4}$% c) $33\frac{1}{3}$% d) 37.5%
10.Chalk contains calcium ,carbon and sand 12 : 3 :10 .Find the percentage of carbon in the chalk.

SYLLABUS P.A II : Integers ,Fraction, Decimals, symmetry ,3D shapes, Lines and Angles, Parallel lines , Rational Numbers, Percentage , Ratio and Proportion ,Algebraic Expression, Linear Equation.