

Mathematics Revision

Class 7 Yearly Examination

Linear Equation-

1. Solve-

a) $\frac{2x}{3} = \frac{3x}{8} + \frac{7}{12}$

b) $\frac{2m+5}{3} = 3m-10$

c) $\frac{8x}{3} + 4 = 12$

d) $13(y-4) - 3(y-9) = 5(y+4)$

e) $2x - \frac{1}{3} = \frac{1}{5} - x$

f) $\frac{4x-5}{7} - \frac{2x+1}{2} = \frac{1}{2} - x$

- The sum of four consecutive numbers is 230. Find them.
- A man is 30 years older than his son. In 12 years, the man will be 3 times as old as his son. Find their present ages.
- The numerator of a fraction is 4 less than its denominator. If 1 is added to both the numerator and the denominator, the fraction becomes $\frac{1}{2}$. Find the fraction.
- The sum of the digits of a two digit number is 7. If we add 45 to the number, the digits are interchanged. Find the number.
- Bhairav collected Rs. 600 in his piggy bank by putting in Rs. 2 and Rs. 5 coins. The number of Rs. 5 coins is twice as many as Rs. 2 coin. Find the number of Rs. 2 and Rs. 5 coins.
- Mr. Singh left $\frac{1}{4}$ th of his property to his son and $\frac{1}{5}$ th of his property to his daughter and the remaining to his wife. If the wife's share is Rs.2,20,000 what was the worth of his total property?
- The fifth part of a number when increased by 5 equals to its 4th part decreased by 5. Find the number.

Unitary method-

- If 1152 bars of chocolates can be packed in 8 cartons of the same size, how many such cartons will be required to pack 3888 bars of chocolate?
- A military camp has provisions of 630 men to last for 25 days. How many men must be transferred to another camp so that the food lasts for 30 days?
- If 36 men can finish constructing a boundary wall in 25 days, how many days will 15 men take to complete the construction?
- A taxi covers a certain distance in 4 hours at a speed of 60km/hr. How much time will the taxi take to cover the same distance at a speed of 80km/hr?
- A group of 120 men had provisions for 200 days. After 5 days, 30 men died due to epidemic. How long will the remaining food last?
- 1200 soldiers in a fort had enough food for 28 days. After 4 days, some soldiers were transferred to another fort and thus the food lasted for an extra 32 days. How many soldiers left the fort?

Profit and Loss-

1. Ritu bought a pair of gold bangles for Rs. 25,000 and sold them at a profit of 8%. Find the S.P.
2. By selling a TV set for Rs. 4,500, Ganga incurred a loss of 10%. Had she sold it for Rs. 4,900, what would be her profit or loss %?
3. A shopkeeper bought 6 dozen eggs at the rate of Rs. 50/dozen. On the way to the shop, 6 eggs broke. At what rate per egg does he need to sell the remaining to make a profit of 10%?
4. The S.P. of 16 spoons is equal to the C.P. of 15 spoons. Find the loss%.
5. On selling an exhaust fan for Rs. 7,350, a man gains $\frac{1}{6}$ of its C.P. Find the C.P. of the fan.
6. If the manufacturer gains 10%, the wholesale dealer 15%, and the retailer 25%, then what is the production cost of the machine whose retail price is Rs. 37,950?

Ratio and Proportion-

1. Express in simplest form:
 - a) 9 months : 2 years
 - b) 1m 10cm : 55cm
 - c) 2 kg 250g : 3kg
 - d) 1hr 15min:45min
 - e) $6\frac{2}{3}$: $7\frac{1}{2}$
 - f) 2.5 : 6.5 : 8
2. Find the 3rd proportional: a) 36 and 54 b) 27 and 36
3. Find the mean proportional: a) 0.4 and 0.9 b) 21 and 84
4. Are the following in proportion?
 - a) 84, 42, 44, 22 b) 43, 55, 65, 170
5. If A:B = 5:8 and B:C= 16:25. Find A:C.
6. If A:B = 5:6, and B:C= 4:7, find A:B:C.
7. The ratio of boys and girls in a school is 8:3. If the total number of girls be 375, find the no. of boys.
8. A bag contains Rs. 750 in the form of Rupee, 50paise and 25paise coins in the ratio of 5:8:4. Find the number of coins in each type.

Simple Interest-

1. Rita lent Rs. 6800 for 5 years at 5% p.a. interest, whereas Mita lent Rs 8600 for 4 years at 4% p. a. Who earned more interest and by how much?
2. Vijaya borrowed a certain sum of money from her friend. At the end of 4 years at a rate of interest of 3% p.a., she returned Rs. 9520 to her friend. Find the sum of money Vijaya borrowed from her friend.
3. Find the principal and the amount if S.I. = Rs. 90, A=10% p.a. and T= 63 days.
4. Find the rate of interest p.a. if A=Rs. 4734, P= Rs 3600, T= $3\frac{1}{2}$ years.
5. Find the S.I. if P=Rs.7200, R= $7\frac{1}{2}$ % p.a. , T=7months.
6. If Rs. 640 amounts to Rs. 768 in 2 years 6 months, what will Rs. 850 amount to in 3 years at the same rate % p.a.?
7. A sum of money becomes $\frac{8}{5}$ of itself in 5 years at a certain rate of S.I. Find the rate of interest.
8. A sum of money lent at S.I. amounts to Rs. 4745 in 3 years and to Rs. 5475 in 5 years. Find the sum and rate percent p.a.

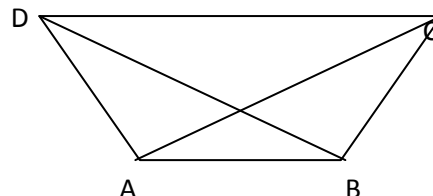
9. Divide Rs. 3600 into two parts such that if 1 part be lent at 9%p.a. and the other at 10% p.a. , the total annual income is Rs. 333.

Triangles and its Properties

- The acute angles of a right triangle are in the ratio 2:1. Find each of these angles.
- If one angle of a triangle is equal to the sum of the other two, show that the triangle is a right angle triangle.

- ABCD is a quadrilateral.

Prove that $AB+BC+CD+DA > AC +BD$



- Is it possible to draw a triangle the lengths of whose sides are 7cm, 8cm, 15cm?
- Two sides of a triangle are 5cm and 9cm long. What can be the length of the third side?

Congruence of a Triangle-

- Without drawing the triangles, state the correspondence between the sides and the angles of the following pair of congruent triangles: ΔABC congruent to ΔQRP .
- BD and CE are the altitudes of ΔABC such that $BD = CE$.
 - State the three pairs of equal parts in ΔCBD and ΔBCE .
 - Is ΔCBD congruent to ΔBCE ?
 - Is $\angle DCB = \angle ECB$?
- In ΔABC , $\angle A=30^\circ$, $\angle B= 40^\circ$ and $\angle C= 110^\circ$
In ΔPQR , $\angle P=30^\circ$, $\angle Q=40^\circ$ and $\angle R= 110^\circ$.
Are these triangles congruent to each other?
- Prove that the bisector of the vertical angle of an isosceles triangle bisects the base and at right angles.

Area and Perimeter –

- The length and breadth of a rectangular field are 120m and 75m respectively. Find (i) the area of the field and the cost of the turfing at Rs. 15/ sq. m. ii) The perimeter of the field and the cost of fencing at Rs. 40/m.
- The cost of fencing a square field at Rs. 16/m is Rs. 32,000. Find the cost of reaping the field at Rs. 35/100 sq. m.
- A room is 9m long, 8m broad and 6.5m high. It has 1 door of dimensions 2m x 1.5m and 4 windows each of dimensions 1.5m x 1m. Find the cost of whitewashing the walls at Rs. 25/ sq.m.
- A rectangular park is 45m long and 30m wide. A path 2.5m is constructed outside the park. Find the area of the path and the cost of constructing it at Rs. 125/sq. m.

5. A rectangular lawn is 60m by 40m and has 2 roads, each 5m wide running in the middle of it one parallel to its length and the other parallel to the breadth. Find the cost of constructing the road at Rs. 80/ sq. m.
6. A wire is in the shape of a rectangle. Its length is 40cm and breadth is 22cm. If the same wire is re-bent in the shape of a square, what will be the measure of each side? Find which shape encloses more area and by how much.
7. The two sides of the parallelogram ABCD are 6cm and 4cm. The height corresponding to the base CD is 3cm. Find the i) area of the parallelogram. ii) the height corresponding to the base AD.
8. Find the area of the right triangle whose base is 1.2m and hypotenuse is 3.7m.
9. The circumference of a circle exceeds its diameter by 18cm. Find the radius of the circle.
10. The ratio of the radii of two circles is 3:4. Find the ratio of their circumference.
11. A racetrack is in the form of a ring whose inner circumference is 264m and the outer circumference is 308m. Find the width of the track.
12. The diameter of the wheel of a car is 63cm. Find the distance travelled by the car when the wheel makes 1000 revolutions.
13. The diameter of the wheel of a car is 70cm. How many revolutions will it make to travel 99km?
14. A copper wire when bent in the form of a square encloses an area of 121 sq.cm. If the same wire is bent in the form of a circle, find the area enclosed by it.
15. Each side of a square park is 80m. At each corner of the park there is a flower belt in the form of a quadrant of a circle of radius 14m. Find the area of the remaining part of the park.