WINTER BREAK REVISION QUESTIONS
Class 7 Mathematics – 23 Questions

1. In △ABC and △DEF, AB = DE, ∠A = ∠D and AC = DF.
(a) Name the congruence rule used.
(b) State whether the triangles are congruent. Justify.

2. Two isosceles triangles have equal bases and equal vertical angles. Are the triangles congruent? Give reasons.

3. In △PQR, PQ = PR. A perpendicular is drawn from P to QR at M. Prove that △PMQ ≅ △PMR.

4. Two straight lines intersect forming four angles. One angle measures 68°. Find the measures of the remaining three angles.

5. If two angles are supplementary and also vertically opposite, find the measure of each angle.

6. In intersecting lines AB & CD, ∠AOC = 3x + 15° and ∠BOD = 5x − 25°. Find the value of x.

7. Simplify: $\left(\frac{5}{6} \times \frac{9}{10}\right) \div \frac{3}{4}$

8. A ribbon of length $\frac{7}{8}$ m is cut into pieces each of length $\frac{1}{16}$ m. How many pieces are obtained?

9. Find the reciprocal of the product of $\frac{3}{5}$ and $\frac{10}{9}$.

10. Simplify and express the answer as a mixed fraction: $\frac{7}{4} \div \frac{2}{3}$

11. In △ABC and △PQR, AB = PQ, BC = QR and ∠B = ∠Q.
(a) Are the triangles congruent?
(b) Name the congruence rule.
(c) Write two corresponding equal parts.

12. The diagonals of a quadrilateral intersect at right angles and bisect each other. Prove that the four triangles formed are congruent.

13. In a triangle, the angles opposite to equal sides are equal. Prove the statement using triangle congruence.

14. Two lines intersect at point O. $\angle 1 = (2x + 10)°$ and its vertically opposite angle is $(4x - 30)°$. Find x and the measure of each angle.

15. The sum of two adjacent angles formed by intersecting lines is 180°. If one angle is three times the other, find both angles.

16. In an intersection of two straight lines, one angle is 25° less than its vertically opposite angle. Find the measures of both angles.

17. Pipe A fills $\frac{3}{10}$ of a tank in one hour and Pipe B fills $\frac{2}{5}$ of the tank in one hour. How much of the tank is filled in one hour if both pipes are opened together?

18. Simplify: $\left(\frac{4}{9} \div \frac{2}{3} \right) \times \frac{15}{8}$

19. A farmer used $\frac{5}{6}$ kg of seeds on one field and $\frac{7}{9}$ kg on another field. Find the total quantity of seeds used.

20. The product of two fractions is $\frac{6}{7}$. If one fraction is $\frac{3}{5}$, find the other fraction.

21. Construct an Equilateral Triangle of side length 5cm.

22. Construct a triangle with angle B = 50° , BC = 6cm and angle A = 80°. Name the triangle formed

23. Define an Altitude of a Triangle.

Name a triangle in which

a) all the altitudes lie in the interior of the triangle.
b) Atleast one of the altitudes lie in the exterior of the triangle.
c) Atleast one of the altitudes lie on the triangle.

Draw the figure in each case.