HALF YEARLY EXAMINATION, 2018-19
MATHEMATICS

Time : 3 hrs.   **Class - VII**   **M.M. : 80**

Name of the student _____Section _____


General Instructions –

- The question paper consists of **33 questions** divided into **4 sections A, B, C and D.**
  - ✓ **Section A** comprises **6** questions of **1** mark each. **All are compulsory.**
  - ✓ **Section B** comprises **6** questions of **2** marks each. **All are compulsory.**
  - ✓ **Section C** comprises **12** questions of **3** marks each. Attempt **any 10** questions.
  - ✓ **Section D** comprises **9** questions of **4** marks each. Attempt **any 8** questions.
- Draw neat diagrams wherever needed.
- Show the required calculation in fair.
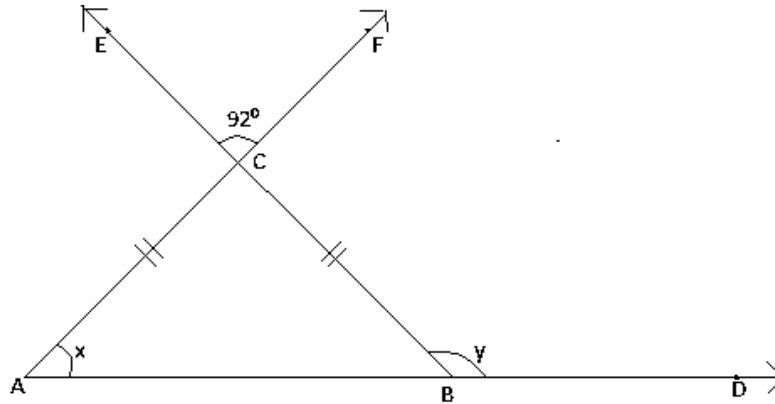

SECTION-A (Attempt all questions)

Q.1   Find 1.03×0.2

Q.2   Write the formula to find the range of a given set of observations.

Q.3   Write equation for the following statement-

   If you take away 5 from seven times y, you get 80

Q.4   If two adjacent angles are supplementary, they form a _____

Q.5   Which is the longest side in a triangle PQR, right angled at P?

Q.6   Two circles are congruent if _____

SECTION - B (Attempt all questions)

Q.7   Evaluate : $[(-36) \div 12] \div 6$

Q.8   Solve : $42.8 \div 0.02$

Q.9   The ages (in years) of 10 teachers of a school are 32, 41, 28, 54, 35, 26, 23, 33, 38, 40. Find the mean age of teachers.

Q.10 Solve : $4 = 34 + 5 (y + 2)$

Q.11 In the given figure if $\angle 1 = 40^0$, find $\angle 2$ and $\angle 3$
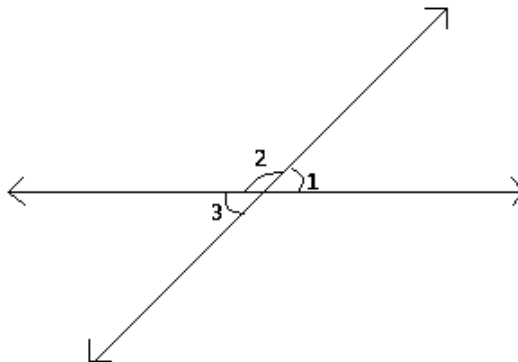
Q.12 Find the values of the angles x and y if $\angle ECF = 92^0$

SECTION-C (Attempt any 10 questions)

Q.13 Solve using suitable property. State the property used:

$(-42) \times (-19) + 42$

Q.14 Which is greater $\dfrac{1}{5}$ of $\dfrac{10}{11}$ **or** $\dfrac{3}{4}$ of $\dfrac{6}{7}$

Q.15 In a class of 40 students, $\dfrac{1}{5}$ of the total number of students like to study English, $\dfrac{2}{5}$ of the total number like to study Mathematics and remaining like to study Science

   i)   How many students like to study English?

   ii) How many students like to study Mathematics?

   iii) What fraction of the total number of students like to study Science?

Q.16 The weights (in kg) of 15 students of a class are -

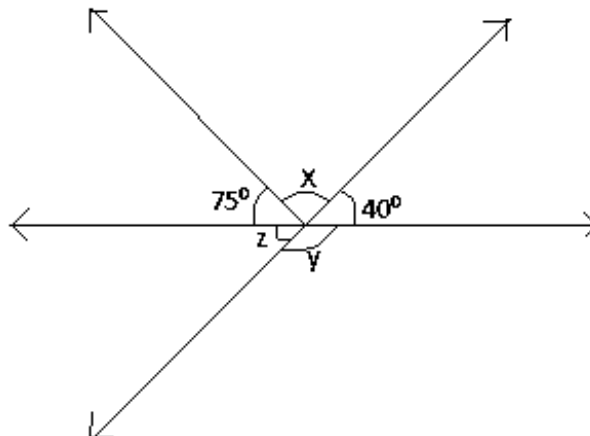38, 42, 35, 37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47.

Find the mode and median of this data.

Q.17 A natural number is 5 times another and their sum is 84. Find the numbers.

Q.18 Solve the following equations:

   i) $2a - \dfrac{1}{2} = 3$ ii) $2m + 7 = 13$

Q.19 Find x, y and z in the given figure:

Q.20 A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12m from the base of the tree. Find the original height of the tree.

Q.21 Is it possible to have a triangle with sides of length 10.2cm, 5.8cm and 4.5cm? Explain why?
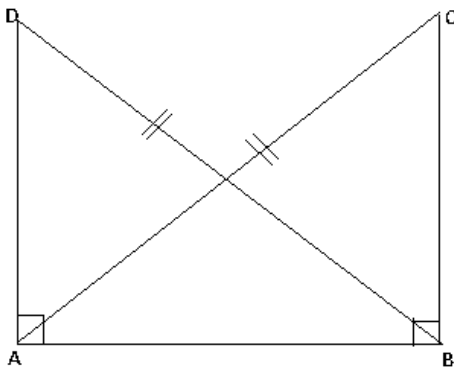
Q.22 In the adjoining figure identify:

a) One pair of corresponding angles

b) One pair of alternate interior angles

c) One pair of (co-interior angles) interior angles on the same side of transversal
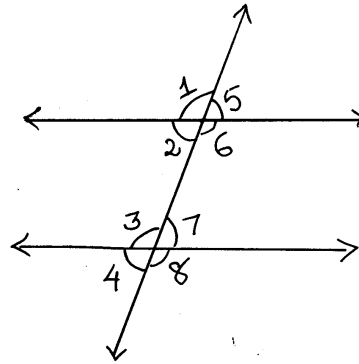
Q.23 In the given figure DA $\perp$ AB, CB $\perp$ AB and AC = BD.

a) State the three pairs of equal parts in $\triangle$ABC and $\triangle$BAD

b) Is $\triangle$ABC $\cong$ $\triangle$BAD ? Why ?

Q.24 If $\triangle$PQR $\cong$ $\triangle$XYZ under the correspondence PQR $\leftrightarrow$ XYZ, write all the corresponding congruent parts of the triangles.

SECTION-D (Attempt any 8 questions)

Q.25 Suppose we represent the distance above the ground by a positive integer and that below the ground by a negative integer, then answer the following:

i) An elevator descends into a mine shaft at the rate of 5 metre per minute. What will be its position after one hour?

ii) If it begins to descend from 15 metre above the ground, what will be its position after 45 minutes.

Q.26 Neha's father's age is 5 years more than 3 times Neha's age. Find Neha's age if her father's age is 44 years.

Q.27 The sale of English and Hindi books in the year 1995, 1996, 1997and 1998 are given below:

| Years	1995	1996	1997	1998
English	350	400	450	620
Hindi	500	520	600	650

Draw a double bar graph to represent the above data.

Q.28 If AM is a median of triangle ABC, then prove that AB+BC+CA > 2AM.

Q.29 The diagonals of a rhombus measure 16cm and 30cm. Find its perimeter.

Q.30 Ronit's mother gave him some money and asked him to buy some bananas. Ronit went to the market. There he found that one vendor was selling bananas at Rs. 21.60 per dozen and the other vendor was selling the same variety at Rs.19.80 per dozen. Ronit bought 2 dozen of bananas from the second vendor.

    i)   At what price, the first vendor was selling one banana?

    ii)   How much money did Ronit pay to the second vendor?

    iii) Here which value is depicted by Ronit?

Q.31 In the following figure, line m is parallel to line n , find $\angle 1$, $\angle 2$, $\angle 3$ and $\angle 4$.
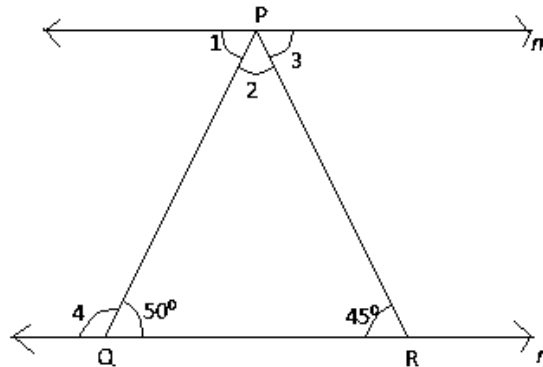
Q.32 In the given figure, name the following pairs of angles :

    i)   Obtuse vertically opposite angles

    ii)   Adjacent complementary angles

    iii) Unequal supplementary angles

    iv) Adjacent angles that do not form a linear pair
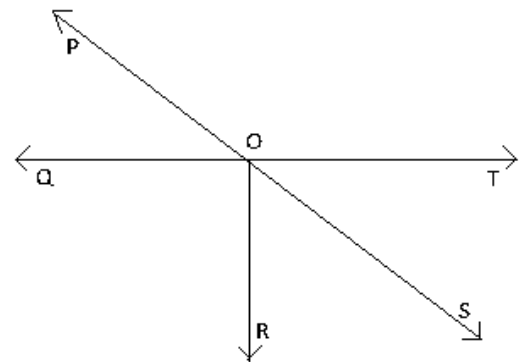
Q.33 In the given figure AD = CD and AB = CB

    i) State the 3 pairs of equal parts in ∆ABD and ∆CBD

    ii) Is ∆ABD ≅ ∆CBD? Why or why not?