

MODEL QUESTION SET

Mathematics

Class: 7

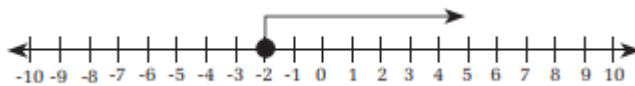
F.M.: 50

Time: 2 hours

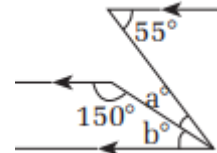
Attempt all the questions.

1. The following three sets of students of class 7 based on their roll numbers are formed.
 $A = \{\text{roll numbers of students less than } 5\}$, $B = \{\text{roll number of student between } 7 \text{ and } 8\}$
and $C = \{\text{prime roll numbers of students between } 10 \text{ and } 20\}$.
List the elements of these sets and answer the following questions.
 - (a) Which of the above sets is the empty set? [1]
 - (b) State with reason whether the sets A and C are equal or equivalent sets. [1]
 - (c) Write any one subset of set-A consisting of only two elements. [1]
2.
 - (a) The integer which is 4 units right to (-1) is ... [1]
 - (b) In a school Auditorium, there are three types of rows arrangements possible for watching a program: rows of 30 students in each row or rows of 40 students in each row or rows of 45 students in each row. What is the least number of students so that all the students can be accommodated in each of these arrangements? [2]
 - (c) There is a cubical reservoir water tank in Anamika's house. If the volume of the tank is 512 cubic meter, find the height of the tank. [2]
3. There are 15 students in class 7 who need the school shirt of same size and $2\frac{1}{3}$ meter of cloth is required to make a shirt.
 - (a) Find the total length of the cloth required to make the shirt to them. [1]
 - (b) How many shirts can be made from a piece of cloth $9\frac{1}{3}$ meter long? [2]
 - (c) Convert the length of cloth required for a shirt in decimal. [1]
 - (d) If the length of a piece of cloth is 36.25 meter, how many meters of cloth is left? [1]
4. A shopkeeper sold 20 mobile sets of same brand for Rs 3,00,0000 at the same rate in a week.
 - (a) What is the selling price of each mobile set? [1]
 - (b) If he bought each mobile set for Rs 12,500, find his profit or loss percent. [2]
 - (c) If each mobile set is 12 cm long, 6 cm broad and 1 cm thick, find the ratio of it length to the breadth. [1]
5. Mr. Sharma had a triangular plot of land having length of edges 40 m, 30.5m and 48.5 m.
 - (a) What is the perimeter of his plot? [1]
 - (b) If he constructed a circular pond of radius 7 m inside the plot, find the circumference of the pond. [2]
 - (c) If he built a cuboidal house on his plot with length 20 m., width 18 m. and height 25, what is the volume of his house? [1]
 - (d) If one of the rooms of his house is 10 m long, 6 m wide and 4 m high, calculate the surface area of the room. [2]

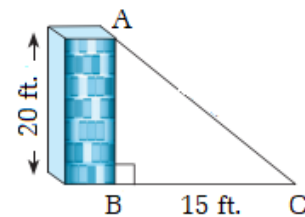
6. (a) What is the expanded form of $(a + b)^2$? [1]
 (b) The length of a rectangular mat is 3^{x-y} meter and its breadth is 3^{y-x} meter. Find the area of the mat. [2]
7. On the occasion of birthday, Pemba distributed $(p^2 + 29p - 96)$ bottles of sanitizer equally among $(p + 32)$ people of his village.
 (a) Find the number of bottles of sanitizer received by each people. [2]
 (b) If $x = 8$, find the actual number of bottles of sanitizer, number of people, and share of each people. [2]
8. (a) Write down the inequality represented by the following graph. [1]



- (b) There are 40 students in a class. If the number of boys is 10 more than that of girls, find the number of boys and girls. [2]
9. (a) What is the measure of angle formed by a revolving a line in a complete rotation at a point? [1]
 (b) In the given figure, find the measure of 'a' and 'b'. [2]



- (c) Construct a triangle ABC in which $AB = 5.6$ cm, $AC = 4.1$ cm and $\angle A = 45^\circ$. [3]
10. (a) Is every rectangle a parallelogram? Give reason. [1]
 (b) In the figure, a ladder rest against a vertical wall at a height of 15 ft. If the foot of the ladder is at a distance of 20 ft from the wall on the ground, what is the length of the ladder? Find it. [2]
 (c) Draw the net of a tetrahedron. [1]
11. (a) The vertices of triangle ABC are A (2, 5), B (-3, 1) and C (4, 0). Reflect the ΔABC about y-axis then find the coordinates of image $\Delta A'B'C'$. State whether the ΔABC and $\Delta A'B'C'$ congruent or not. [3]
 (b) If the bearing of Sujan's school from his home is 135° , what is the bearing of his home from the school? Find it. [2]



12. The table given below shows the S.E.E. result of a school for last four years.

Year (in B.S.)	2075	2076	2077	2078
'A+' grade	10	15	12	14
'A' grade	15	10	18	16
'B+' grade	5	11	8	10

- (a) Draw a multiple bar graph to represent the data. [2]
 (b) How many students secured 'A+' in the last three years? [1]

The End