

## 第八套

1. The diagram shows part of a number line with evenly spaced intervals between marks. What is the value of P ?
2. The average of a set of 10 numbers is 15. If one number is removed the average of the remaining numbers is 16. What is the value of the number removed?
3. A car traveling at an average rate of 54 kilometers per hour made a trip in 5 hours. If it had traveled at an average speed of 60 kilometers per hour, how many minutes less would the trip have taken?

$$\frac{3}{x+1} + \frac{x+1}{3} = \frac{3}{8} + \frac{8}{3}$$

4. If x is an integer what is the value of x?
5. The members of a class are standing in a line. Ravi is 32nd in line counting from one end and 12th in line counting from the other. How many students are in the class?
6. Participation in team sports in a certain college was up 25 percent at the end of last year, but participation in individual sports like tennis was down 25 percent. The ratio of students participating in team sports to students taking part in individual sports was how many times greater at the end of the year than the ratio at the beginning of the year?
7. If  $x \clubsuit y = (x + y)^2$  for all positive integers, what is the value of  $(1 \clubsuit 2) \clubsuit 3$  ?
8. Three cubes of side 6 are glued together to make a rectangular box. The surface area of the rectangular box is how much less than the total surface area of the three separate cubes?
9. If the population of bacteria in a culture flask doubles every 20 minutes, the population after 3 hours 20 minutes will be how many times the population at the start?
10. In the x-y plane the distance between the point A (1,1) and B (5,x) is 5.  
What is one possible value of x?