CHAPTER

9 Linear Inequalities

1. Two real numbers or two algebraic expressions related by the symbols $<$, $>$, $\leq$ or $\geq$ form an inequality.
2. Equal numbers may be added to (or subtracted from) both sides of an inequality.
3. Both sides of an inequality can be multiplied (or divided) by the same positive number. But when both sides are multiplied (or divided) by a negative number, then the inequality is reversed.
4. The values of x, which make an inequality a true statement, are called *solutions of the inequality*.
5. To represent $x < a$ (or $x > a$) on a number line, put a circle on the number a and dark line to the left (or right) of the number a.
6. To represent $x \leq a$ (or $x \geq a$) on a number line, put a dark circle on the number a and dark the line to the left (or right) of the number x.
7. The solution region of a system of inequalities is the region which satisfies all the given inequalities in the system simultaneously.