



#### Linear Inequations Ex 15.4 Q1

Let  $x$  be the smaller of the two consecutive odd positive integers. Then the other odd integer is  $x + 2$ .  
It is given that both the integers are smaller than 10 and their sum is more than 11.

$$\begin{aligned}\therefore & x + 2 < 10 \text{ and } x + (x + 2) > 11 \\ \Rightarrow & x < 10 - 2 \text{ and } 2x + 2 > 11 \\ \Rightarrow & x < 8 \text{ and } 2x > 9 \\ \Rightarrow & x < 8 \text{ and } x > \frac{9}{2} \\ \Rightarrow & \frac{9}{2} < x < 8 \\ \Rightarrow & x = 5, 7 \quad [\because x \text{ is an odd integer}]\end{aligned}$$

Hence, the required pairs of odd integers are  $(5, 7)$  and  $(7, 9)$ .

#### Linear Inequations Ex 15.4 Q2

Let  $x$  be the smaller of the two consecutive odd natural numbers. Then the other odd integer is  $x + 2$ .

It is given that both the natural number are greater than 10 and their sum is less than 40.

$$\begin{aligned}\therefore & x > 10 \text{ and } x + x + 2 < 40 \\ \Rightarrow & x > 10 \text{ and } 2x < 38 \\ \Rightarrow & x > 10 \text{ and } x < 19 \\ \Rightarrow & 10 < x < 19 \\ \Rightarrow & x = 11, 13, 15, 17 \quad [\because x \text{ is an odd number}]\end{aligned}$$

Hence, the required pairs of odd natural numbers are  $(11, 13)$ ,  $(13, 15)$ ,  $(15, 17)$  and  $(17, 19)$ .

#### Linear Inequations Ex 15.4 Q3

Let  $x$  be the smaller of the two consecutive even positive integers.

Then the other even integer is  $x + 2$ .

It is given that both the even integers are greater than 5 and their sum is less than 23.

$$\begin{aligned}\therefore & x > 5 \text{ and } x + x + 2 < 23 \\ \Rightarrow & x > 5 \text{ and } 2x < 21 \\ \Rightarrow & x > 5 \text{ and } x < \frac{21}{2} \\ \Rightarrow & 5 < x < \frac{21}{2} = 10.5 \\ \Rightarrow & x = 6, 8, 10 \quad [\because x \text{ is an even integer}]\end{aligned}$$

Hence, the required pairs of even positive integer are  $(6, 8)$ ,  $(8, 10)$  and  $(10, 12)$ .

#### Linear Inequations Ex 15.4 Q4

Suppose Rohit scores  $x$  marks in the third test then,

$$\begin{aligned}65 & \leq \frac{65 + 70 + x}{3} \\ \Rightarrow & 195 \leq 135 + x \\ \Rightarrow & 195 - 135 \leq x \\ \Rightarrow & 60 \leq x\end{aligned}$$

Hence, the minimum marks Rohit should score in the third test is 60.

\*\*\*\*\* END \*\*\*\*\*