Linear Inequations Ex 15.4 Q1

Let x be the smaller of the two consecutive odd positive intgers. 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.

$\therefore \quad x+2<10$ and, $x+(x+2)>11$

$\Rightarrow \quad x<10-2$ and $2x+2>11$

$\Rightarrow \quad x<8$ and $2x>9$

$\Rightarrow \quad x<8$ and $x>\frac{9}{2}$

$\Rightarrow \quad \frac{9}{2}<x<8$

$\Rightarrow \quad x=5,7 \qquad [\because x \text{ is an odd integer}]$

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.

$\therefore \quad x>10$ and, $x+x+2<40$

$\Rightarrow \quad x>10$ and $2x<38$

$\Rightarrow \quad x>10$ and $x<19$

$\Rightarrow \quad 10<x<19$

$\Rightarrow \quad x=11,13,15,17 \qquad [\because x \text{ is an odd number}]$

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.

$\therefore \quad x>5$ and, $x+x+2<23$

$\Rightarrow \quad x>5$ and $2x<21$

$\Rightarrow \quad x>5$ and $x<\frac{21}{2}$

$\Rightarrow \quad 5<x<\frac{21}{2}=10.5$

$\Rightarrow \quad x=6,8,10 \qquad [\because x \text{ is an even integer}]$

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,

$$65 \le \frac{65+70+x}{3}$$

$\Rightarrow \quad 195 \le 135+x$

$\Rightarrow \quad 195-135 \le x$

$\Rightarrow \quad 60 \le x$

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

********** END **********