Assignment 11

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Download all python codes from

https://github.com/ka−raja−babu/Matrix−Theory/tree/main/Assignment11/Codes

and latex-tikz codes from

https://github.com/ka−raja−babu/Matrix−Theory/tree/main/Assignment11

1 Question No. 2.68

Solve 5(2x-7) - 3(2x+3) ≤ 0 , 2x+19 ≤ 6x+47 .

2 Solution

1) Solving first inequality

$$5(2x-7)-3(2x+3)\le 0 \tag{2.0.1}$$
$$\implies 10x-35-6x-9\le 0 \tag{2.0.2}$$
$$\implies 4x-44\le 0 \tag{2.0.3}$$
$$\implies x\le 11 \tag{2.0.4}$$
$$\implies x\in(-\infty,11] \tag{2.0.5}$$

2) Solving second inequality

$$2x+19\le 6x+47 \tag{2.0.6}$$
$$\implies -4x\le 28 \tag{2.0.7}$$
$$\implies -x\le 7 \tag{2.0.8}$$
$$\implies x\ge -7 \tag{2.0.9}$$
$$\implies x\in[-7,\infty) \tag{2.0.10}$$

From (2.0.4) and (2.0.9),solution of the given system of inequality is given by

$$-7\le x\le 11 \tag{2.0.11}$$
$$\implies x\in[-7,11] \tag{2.0.12}$$

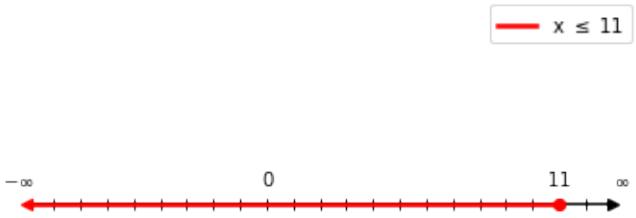

Fig. 2.1: x ≤ 11

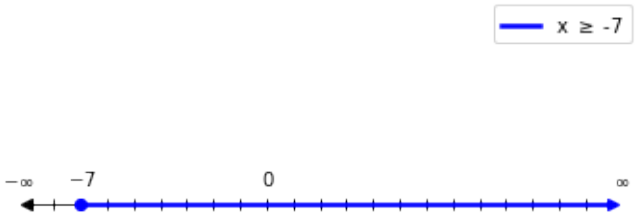

Fig. 2.2: x ≥ -7

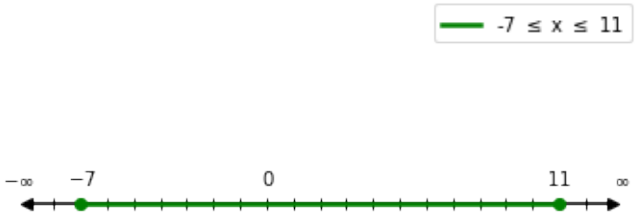

Fig. 2.3: -7 ≤ x ≤ 11