

DPP: 1 **Subject:** Mathematics

Topic: Inequalities

1.
$$3x^2 - 7x + 4 \le 0$$
.

$$3x^2 - 7x - 6 < 0$$
.

3.
$$x^2 - 14x - 15 > 0$$
.

4.
$$2-x-x^2 \ge 0$$
.

5.
$$\frac{x-2}{x^2-9} < 0$$
.

6.
$$\frac{6x-5}{4x+1} < 0.$$

7.
$$\frac{2x-3}{3x-7} > 0.$$

8.
$$3x^2 - 7x + 6 < 0$$
.

9.
$$x^2 - 3x + 5 > 0$$
.

10.
$$\frac{x^2 - 5x + 6}{x^2 + x + 1} < 0.$$

11.
$$\frac{x^2 + 2x - 3}{x^2 + 1} < 0.$$

12.
$$\frac{x^4 + x^2 + 1}{x^2 - 4x - 5} > 0$$

13.
$$\frac{x^2 - 7x + 12}{2x^2 + 4x + 5} > 0.$$

14.
$$\frac{1+3x^2}{2x^2-21x+40} < 0.$$

15.
$$\frac{x^4 + x^2 + 1}{x^2 - 4x - 5} > 0.$$

16.
$$\frac{1-2x-3x^2}{3x-x^2-5} > 0.$$

17.
$$\frac{x^2 - 5x + 7}{-2x^2 + 3x + 2} > 0.$$

18.
$$\frac{x}{x^2 - 3x - 4} > 0$$
.

19.
$$\frac{x^2 + 7x + 10}{x + 2/3} > 0.$$

$$20. \qquad \frac{3x^2 - 4x - 6}{2x - 5} < 0.$$

$$21. \qquad \frac{17 - 15x - 2x^2}{x + 3} < 0.$$

22.
$$\frac{x^2 - 9}{3x - x^2 - 24} < 0.$$

23.
$$\frac{x^2 - x - 6}{x^2 + 6x} \ge 0.$$

24.
$$\frac{x^2 - 5x + 6}{x^2 - 11x + 30} < 0.$$

$$25. \qquad \frac{x^2 - 4x + 5}{x^2 + 5x + 6} \ge 0$$

$$26. \qquad \frac{x-1}{x^2 - x - 12} \le 0$$

$$27. \qquad \frac{0.5}{x - x^2 - 1} < 0.$$

$$28. \qquad \frac{1+x^2}{2x^2-5x+6} < 0.$$

29.
$$\frac{5x+4}{3+x} - \frac{2+x}{1-x} \le 0$$

$$30. \qquad \frac{x+7}{x-5} + \frac{3x+1}{2} \ge 0.$$

$$31. \qquad 2x^2 + \frac{1}{x} > 0.$$

32.
$$\frac{14x}{x+1} - \frac{9x-30}{x-4} < 0$$

$$\frac{14x}{x+1} \xrightarrow{9x-30} < 0.$$

$$\frac{33}{x+5} < \frac{4x+19}{x+5} < \frac{4x-17}{x-3}.$$

$$\frac{x-1}{x+1} < x.$$

$$34. \qquad \frac{x}{x+2} \le \frac{1}{x}.$$

$$35. \qquad \frac{x}{x-3} \le \frac{1}{x}.$$

$$36. \qquad \frac{x-1}{x+1} < x.$$

$$37. \qquad \frac{1}{x+2} < \frac{3}{x-3}.$$

$$38. \qquad \frac{4x+3}{2x-5} < 6.$$

39.
$$\frac{5x-6}{x+6} < 1$$
.

40.
$$\frac{5x-8}{4-x} < 2.T - JEE$$

40.
$$\frac{5x-8}{4-x} < 2.T - JEE$$
 41. $E(\frac{x-1}{x+3}) > 2.$ Pre-Fou42. $C(\frac{7x-5}{8x+3}) > 4.$

$$43. \qquad \frac{x}{x-5} > \frac{1}{2}.$$

44.
$$\frac{3}{x-2} < 1$$
.

$$45. \qquad \frac{1}{x-1} \le 2.$$

46.
$$\frac{1}{x} < 1$$
.

47.
$$\frac{x^2-1}{2x+5} < 3$$
.

48.
$$\frac{x^2+1}{4x-3} > 2$$
.

49.
$$\frac{x^2+2}{x^2-1} < -2.$$

50.
$$\frac{3x-5}{x^2+4x-5} > \frac{1}{2}$$

$$51. \qquad \frac{2x+3}{x^2+x-12} \le \frac{1}{2}$$

52.
$$\frac{5-2x}{3x^2+2x-16} < 1.$$

53.
$$\frac{15-4x}{x^2-x-12} < 4.$$

$$54. \qquad \frac{1}{x^2 - 5x + 6} \ge \frac{1}{2}.$$

55.
$$\frac{5-4x}{3x^2-x-4} < 4.$$

56.
$$\frac{19-33x}{7x^2-11x+4} > 2.$$

57.
$$\frac{5x-1}{x^2+3} < 1$$
.

$$58. \qquad \frac{x^2 - x}{x^2 + 1} < -\frac{1}{2}.$$

59.
$$\frac{x^2 - 1}{x^2 + x + 1} < 1.$$

$$60. \qquad \frac{x^2 + 6x - 7}{x^2 + 1} < 2.$$

61.
$$\frac{2x^2 - 3x - 459}{x^2 + 1} > 1.$$

62.
$$\frac{5x^2-2}{4x^2-x+3} < 1.$$

63.
$$\frac{x^2 - 5x + 12}{x^2 - 4x + 5} > 3.$$

$$64. \qquad \frac{x^2 - 3x + 24}{x^2 - 3x + 3} < 4.$$

65.
$$\frac{0.5x + 49}{10x^2 - x - 2} < \frac{1}{2}.$$

66.
$$\frac{4}{1+x} + \frac{2}{1-x} < 1$$
.

67.
$$2+\frac{3}{x-1}>\frac{2}{x}$$
.

68.
$$1+\frac{2}{x-1}>\frac{6}{x}$$
.

69.
$$\frac{4}{x+2} > 3-x$$

$$70. \qquad x \le \frac{6}{x - 5}$$

$$71. \qquad x - 17 \ge \frac{60}{x}$$

72.
$$\frac{30x-9}{x-2} \ge 25(x+2)$$

73.
$$\frac{x+1}{x-1} \ge \frac{x+5}{x+1}$$
.

74.
$$\frac{1}{x-2} - \frac{1}{x} \le \frac{2}{x+2}$$



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