

National 5: Linear Inequalities

Non-calculator. Solve each inequation. Remember to change the inequality sign if multiplying or dividing by a negative number, or if you need to 'swap sides' at the end. For example, $4 < x$ becomes $x > 4$.

- Q1**
- | | | |
|----------------------------|---------------------------------|----------------------------------|
| a) $3x < 15$ | b) $4x > -12$ | c) $-2x < 10$ |
| d) $-3x > -18$ | e) $2x \leq 1$ | f) $3x \geq 2$ |
| g) $-x > 5$ | h) $3 > x$ | i) $5 \leq 2x$ |
| j) $-2x < 7$ | k) $8 \leq -2x$ | l) $6 \leq -x$ |
| m) $\frac{x}{2} < 5$ | n) $-\frac{1}{3}x > 5$ | o) $-\frac{3x}{4} \geq 6$ |
| p) $-\frac{2}{3}x \leq -5$ | q) $\frac{1}{2} > \frac{2}{3}x$ | r) $\frac{1}{4} < -\frac{2}{3}x$ |
- Q2**
- | | | |
|--------------------------------|-------------------------------------|--------------------------------------|
| a) $2x + 7 < 15$ | b) $4x - 1 \leq 11$ | c) $5 + 3x \geq -1$ |
| d) $-x + 7 > 1$ | e) $-3x + 2 > 14$ | f) $4 - 3x < 16$ |
| g) $5 - x \leq -1$ | h) $-6x + 19 > 1$ | i) $9 + 2x \leq 15$ |
| j) $\frac{1}{2}x + 1 < 4$ | k) $\frac{2}{3}x - 4 > 2$ | l) $5 - \frac{1}{4}x < 2$ |
| m) $-\frac{1}{5}x + 1 \geq -2$ | n) $4 \leq \frac{2x}{5} + 7$ | o) $2 + \frac{1}{4}x > \frac{1}{2}$ |
| p) $-3x + 1 \leq -4$ | q) $2 < \frac{2}{3}x + \frac{1}{2}$ | r) $-\frac{3}{4}x - 2 > \frac{2}{3}$ |
- Q3**
- | | | |
|-------------------------------|-------------------------------|---|
| a) $5x + 1 > 3x - 9$ | b) $2x - 3 \leq 7x - 18$ | c) $2 + 3x < -x + 14$ |
| d) $6 - x < x + 12$ | e) $4x + 1 \geq x + 9$ | f) $5 - 3x \geq -6x + 4$ |
| g) $-2x + 3 \leq x + 4$ | h) $2x + 1 > 9 - x$ | i) $1 + 3x < 7x + 6$ |
| j) $\frac{1}{2}x + 1 > x + 2$ | k) $x + 5 > 3 - \frac{2}{3}x$ | l) $2 - \frac{3}{4}x \geq 2x + \frac{1}{2}$ |
- Q4**
- | | | |
|--|---|---|
| a) $2(x + 1) > 5x - 7$ | b) $3(4 - 2x) + x \leq -13$ | c) $3 - 2(x + 1) < 11$ |
| d) $6x \geq 5 - 2(4 - x)$ | e) $6(x - 1) > 2(4x + 1)$ | f) $-2(x + 1) < 7(2 - 3x)$ |
| g) $x \geq \frac{1}{2}(4 - x) + 5$ | h) $3\left(\frac{x}{4} + 2\right) > 5 - 2x$ | i) $5 - \frac{3}{4}\left(x + \frac{1}{2}\right) < 2x$ |
| j) $3x - 1 < \frac{1}{2}\left(2 + \frac{1}{3}x\right)$ | k) $\frac{2}{5}(10x + 1) - x \geq 3$ | l) $1 - 2\left(-x + \frac{5}{2}\right) < 3x$ |