N5 Maths: Linear Inequalities

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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)** $1 - 2\left(-x + \frac{5}{2}\right) < 3x$

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