

INEQUALITIES

1) If x is chosen from the set $\{0,1,2,3,4,5,6,7,8\}$, list the solutions of the following inequalities:

- (a) $x > 5$ (b) $x \leq 4$ (c) $x > 8$ (d) $x + 3 \geq 5$ (e) $3 < x < 7$
(f) $3 \leq x \leq 7$ (g) $2 \leq x < 5$ (h) $6 < x < 8$

2) Draw a number line labelled from -5 to 5. If x can be any number, draw diagrams to illustrate each of the following inequalities:

- (a) $x < 3$ (b) $x \geq -1$ (c) $x < -2$ (d) $x + 3 \leq 5$ (e) $-3 < x < 2$
(f) $-2 < x \leq 3$ (g) $4 > x > -2$ (h) $x + 3 \geq 1$

3) If x is chosen from the set $\{-4,-3,-2,-1,0,1,2,3,4\}$, list the solutions of the inequalities in Question 2.

4) Write each of the following statements in the form " $a < x < b$ "

- (a) x lies between 2 and 7 (b) x is greater than 3 but less than 10 (c) $x > 4$ and $x < 8$

5) Solve each of the following inequalities:

- (a) $4x - 8 > 0$ (b) $3x + 14 \leq 5$ (c) $11 - 2x < 5$ (d) $5x + 4 \geq 16$
(e) $13 - 4x > 19$ (f) $7x - 2 < 4x + 7$ (g) $2x - 3 > 6x + 4$ (h) $3(2-x) < 9$
(i) $3x + 4 < -7$ (j) $8 - 2x \geq 3x + 21$

6) If x is chosen from the set $\{-4,-3,-2,-1,0,1,2,3,4\}$, list the solutions of each inequality in Q5.

7) Solve each of the inequalities:

- (a) $x^2 \leq 25$ (b) $x^2 > 16$ (c) $x^2 + 3 < 7$ (d) $x^2 \geq 1$

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