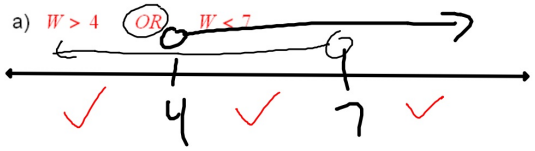
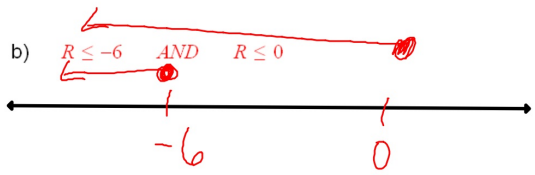
1. State the solution to each compound inequality.
Write your answer as a single inequality if possible.

a) $W > 4$ OR $W < 7$



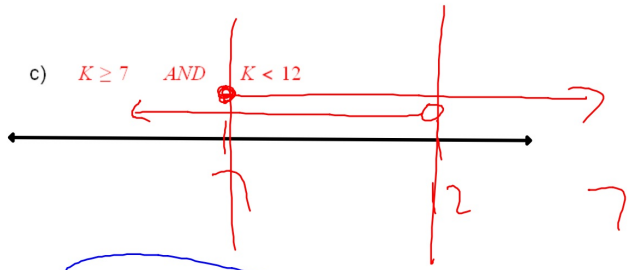
R

b) $R \leq -6$ AND $R \leq 0$



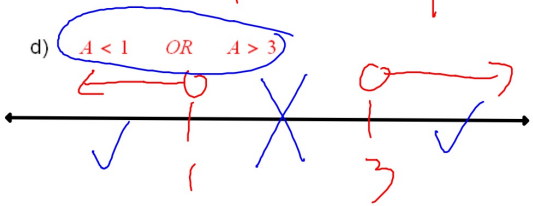
$R \leq -6$

c) $K \geq 7$ AND $K < 12$

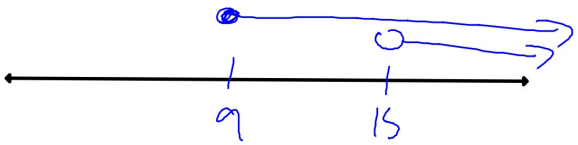


$7 \leq K < 12$

d) $A < 1$ OR $A > 3$

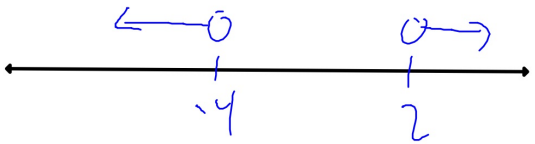


e) $Q \geq 9$ OR $Q > 15$



$Q \geq 9$

f) $M < -4$ AND $M > 2$



NO SOL

2. Solve each system of equations using any method.

a) $a = 4b + 7$
$3a - 5b = 7$

$(-1, -2)$

you can use substitution

use elimination

b) $4m - 9n = 1$
$-3(5m - 3n = 26)$

$4m - 9n = 1$
$-15m + 9n = 78$

$-11m = -77$

$m = 7$

$(7, 3)$

c) $6x + y - 7z = 65$
$-x - 5y + 8z = -49$
$2x + 3y + z = -7$

Use matrices:

$[A]$ $[B]$

$\begin{bmatrix} 6 & 1 & -7 \\ -1 & -5 & 8 \\ 2 & 3 & 1 \end{bmatrix}$ $\begin{bmatrix} 65 \\ -49 \\ -7 \end{bmatrix}$

$[A]^{-1}[B] \rightarrow (3, -2, -7)$

3. Use these functions:

$f(x) = x - 6$ $g(x) = x^2 + 5x$ $h(x) = \frac{4x + 1}{3 - 2x}$

$h(5) = \frac{21}{-7} = -3$

a) Find $g(h(5))$

$g(-3) = -6$

$f(x) = x - 6$ $g(x) = x^2 + 5x$ $h(x) = \frac{4x + 1}{3 - 2x}$

b) Find $h(f(x))$

$\frac{4(x-6)+1}{3-2(x-6)} = \frac{4x-24+1}{3-2x+12} = \frac{4x-23}{-2x+15}$

$f(x) = x - 6$ $\quad g(x) = x^2 + 5x$ $\quad h(x) = \dfrac{4x+1}{3-2x}$

c) Find $g(f(x))$

$(x-6)^2 + 5(x-6)$

$x^2 - 12x + 36 + 5x - 30$

$x^2 - 7x + 6$