

Exam Questions

Solve Linear Equations

15. Solve the equation $5 - 2(1 + 3x) = 27$ 3 KU
16. Solve the equation $5 + 3a = a - 15$ 3 KU

Inequalities

1. Solve the inequality $8 - x > 3(2x + 5)$ 3 KU
2. Solve algebraically the inequality $3y < 4 - (y + 2)$ 3 KU
3. Solve the inequality $3 - (x - 6) < 2x$ 3 KU
4. Solve algebraically the inequality $6x - 2 < 5(1 - 3x)$ 3 KU
5. Solve algebraically, the inequality $2 + 5x \geq 8x - 16$ 3 KU
6. Solve the inequality $2 - 5(3x - 2) \geq 4(1 - 3x)$ where x is a positive integer. 5 KU

Answers

Solve Linear Equations

15. $5 - 2 - 6x = 27 \quad -24 = 6x \quad x = -4$
16. $5 + 3a = a - 15 \quad 2a = -20 \quad a = -10$

Inequalities

1. $8 - x > 3(2x + 5) \rightarrow 8 - x > 6x + 15 \rightarrow x < -1$
2. $3y < 4 - (y + 2) \rightarrow 3y < 2 - y \rightarrow y < \frac{1}{2}$
3. $3 - x + 6 < 2x \rightarrow 9 < 3x \rightarrow x > 3$
4. $6x - 2 < 5 - 15x \rightarrow 21x < 7 \rightarrow x < \frac{1}{3}$
5. $2 + 5x \geq 8x - 16 \rightarrow 18 \geq 3x \rightarrow x \leq 6$
6. $2 - 15x + 10 \geq 4 - 12x \rightarrow 12 - 15x \geq 4 - 12x$
 $\rightarrow 8 \geq 3x \rightarrow x \leq \frac{8}{3} \quad x \leq 2\frac{2}{3}$
 $x = 1 \text{ or } 2 \text{ since } x \text{ is a positive integer.}$