

# Solving Inequalities (B)



**ANSWERS**



## Section A

Solve the following inequalities.

1)  $5x + 4 \leq 14$   
 $x \leq 2$

2)  $6x - 1 > 23$   
 $x > 4$

3)  $\frac{11x + 22}{2} \leq 33$   
 $x \leq 4$

4)  $\frac{6x}{8} - 5 < 4$   
 $x < 12$

5)  $3(4x + 2) > 9$   
 $x > \frac{1}{4}$

6)  $\frac{2(2 + 5x)}{8} \leq 3$   
 $x \leq 2$

7)  $6x + 15 \geq 9x$   
 $x \leq 5$

8)  $5x - 11 > 3x + 9$   
 $x > 10$

9)  $4(3x + 5) < 5(2x + 5)$   
 $x < 2.5$

10)  $\frac{7x + 4}{3} \leq x + 12$   
 $x \leq 8$

11)  $4 \leq x + 2 < 17$   
 $2 \leq x < 15$

12)  $6 \leq \frac{3(2x - 5)}{10} \leq 12$   
 $12.5 \leq x \leq 22.5$

## Section B

Solve the following inequalities.

1)  $7 - 3x > 25$   
 $x < -6$

2)  $1 - 5x \leq 41$   
 $x \geq -8$

3)  $2 - \frac{x}{5} \geq 8$   
 $x \leq -30$

4)  $3 - 7x \leq -11$   
 $x \geq 2$

5)  $9x - 7 < -34$   
 $x < -3$

6)  $\frac{2(6 - 2x)}{4} \leq 12$   
 $x \geq -9$

7)  $7x - 7 < 5x + 15$   
 $x < 11$

8)  $-12x - 3 \leq -2x + 47$   
 $x \geq -5$

9)  $9(6 - 2x) > 2(2 - 7x)$   
 $x < 12.5$

10)  $-5 \leq -2x < 10$   
 $-5 < x \leq 2.5$

11)  $4x - 10 \leq 2(x - 1) < 8 + 3x$   
 $-10 < x \leq 4$

12)  $-12 \leq \frac{4(2 - x)}{3} \leq \frac{3x - 6}{4}$   
 $2 \leq x \leq 11$

# Solving Inequalities (B)



**ANSWERS**



## Section C

Find the greatest or smallest integer value of  $n$ . Calculator allowed.

	Greatest integer value of $n$
$4n + 5 < 1$	<b>-2</b>
$1 - 18n > 10$	<b>-1</b>
$n^2 < 99$	<b>9</b>

	Smallest integer value of $n$
$n^{-1} < \frac{1}{10}$	<b>11</b>
$\left(\frac{1}{5}\right)^n < \frac{1}{125}$	<b>4</b>

## Extension:

Choose one of the inequalities below and solve it ( $x$  is an integer value).

$$50 < 2^x < 1000$$

$$6 \leq x < 10$$

$$-\frac{1}{y} \geq -\frac{3}{4}$$

$$y \geq 4/3$$