

Workout

Question 1: Solve each of the inequalities below

(a) $x + 4 > 9$ (b) $x - 3 < 2$ (c) $2x \leq 14$ (d) $8x < 16$

(e) $5x \geq 15$ (f) $\frac{x}{3} > 4$ (g) $\frac{x}{5} \leq 2$ (h) $x + 6 \geq 4$

Question 2: Solve each of the inequalities below

(a) $2x + 1 \leq 9$ (b) $3x - 5 > 16$ (c) $4x + 8 < 32$ (d) $5x - 2 \geq 68$

(e) $\frac{x}{2} + 1 \leq 5$ (f) $\frac{x}{9} - 6 > 4$ (g) $\frac{x+3}{2} \geq 5$ (h) $\frac{x-5}{4} > 2$

Question 3: Solve each inequality below and represent the solution on a number line.

(a) $4x + 7 < 11$ (b) $3x - 2 \geq 10$ (c) $\frac{x}{2} - 3 > 0$ (d) $\frac{x+18}{4} \leq 5$

Question 4: Solve each of the inequalities below

(a) $5(x - 3) \geq 40$ (b) $6(x + 2) < 42$ (c) $2(5x + 1) \leq 36$

(d) $4(x - 2) < 18$ (e) $2(2x - 9) \geq 22$ (f) $3(2x + 7) \leq 9$

Question 5: Solve each of the inequalities below

(a) $4x + 3 > 2x + 11$ (b) $x + 1 \geq 3x - 18$

(c) $13x - 12 < 3x + 13$ (d) $7x - 5 \geq 3x + 11$

Question 6: Find the largest integer that satisfies each inequality below.

(a) $x + 3 < 9$ (b) $2x + 5 < 12$ (c) $7x + 10 \leq 31$

(d) $3x - 5 \leq 9$ (e) $\frac{x}{4} + 3 \leq 8$ (f) $4x + 14 \leq 8$

Solving Inequalities

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Question 6: Find the smallest integer that satisfies each inequality below.

- (a) $2x - 5 \geq 12$ (b) $4x > 9$ (c) $\frac{x+9}{3} \geq 7$
- (d) $7x + 1 > 60$ (e) $10x - 16 \geq 76$ (f) $9x + 4 > 7x + 15$

Question 7: Solve each of the inequalities below

- (a) $6 < x + 3 < 10$ (b) $4 \leq 2x \leq 7$ (c) $1 \leq 3x < 9$
- (d) $4 < \frac{x}{5} < 6$ (e) $9 \leq 2x + 3 \leq 25$ (f) $-3 \leq \frac{x}{4} - 1 < 0$

Question 8: Find the integers that satisfy each of the inequalities below

- (a) $5 < x < 9$ (b) $-3 < x \leq 1$ (c) $4 \leq 2x \leq 8$
- (d) $16 \leq 5x + 1 < 31$ (e) $0 \leq \frac{x-6}{2} < 2$ (f) $-9 < \frac{x}{4} - 1 < -8$

Apply

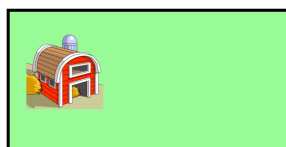
Question 1: Lauren goes shopping and has £50 to spend.
She bought a T-shirt and 3 pairs of leggings.
The T-shirt cost £23.
Each pair of leggings cost £x

- (a) Form an inequality in terms of x.
(b) Solve the inequality to find the possible price of the leggings.

Question 2: Farmer Taylor is placing a fence around his field.
He has 300 metres of fencing but this is not enough.

- (a) Form an inequality in terms of x.
(b) Solve the inequality to find the possible width of the field.

$2x + 5$ metres



x metres

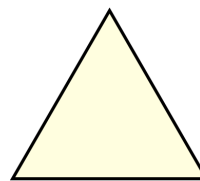
Solving Inequalities

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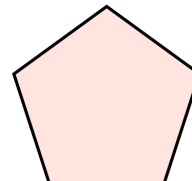
Question 3: The perimeter of the regular pentagon is larger than the perimeter of the equilateral triangle.

(a) Form an inequality in terms of x

(b) Solve the inequality to find the possible range of values for x .



$$x + 6$$



$$x + 2$$

Question 4: Find the range of values of x that satisfies **both**

$$3(x + 2) \leq 30 \quad \text{and} \quad 4x + 3 > 21$$

Question 5: y is a prime number and also satisfies $7 < 2y - 3 \leq 25$

List the possible values of y .