

Name - _____

Start time - __: __

End time - __: __

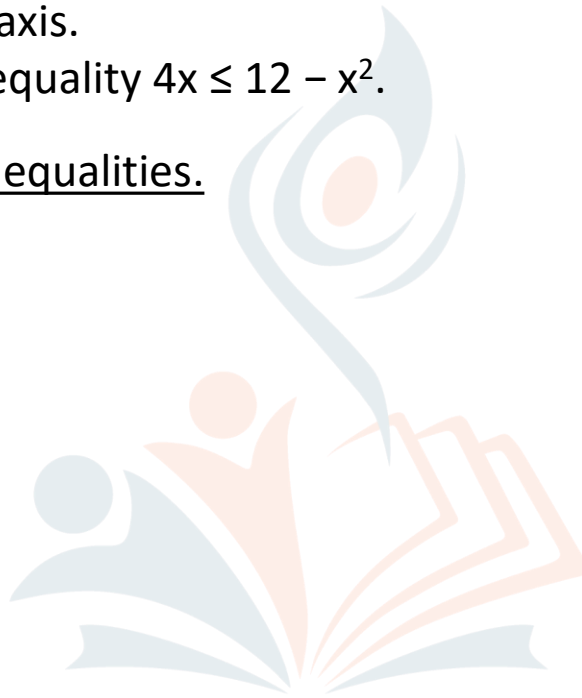
Solve the following.

Consider the inequality $4x \leq 12 - x^2$.

- Rearrange the inequality into the form $g(x) \leq 0$, where $g(x)$ is a quadratic expression.
- (i) Factorise $g(x)$.
(ii) Write down the x-coordinates of the points where the graph of $y = g(x)$ crosses the x-axis.
- Hence solve the inequality $4x \leq 12 - x^2$.

Solve each of these inequalities.

- $x^2 - x - 2 \leq 0$
- $x^2 + x - 2 < 0$
- $x^2 + 6x + 5 \leq 0$
- $x^2 - x - 12 \geq 0$
- $x^2 - 7x + 12 \leq 0$
- $x^2 + 10x + 24 \geq 0$
- $x^2 + 2x - 15 < 0$
- $x^2 - 10x - 11 \leq 0$
- $x^2 - 8x + 15 > 0$
- $x^2 - 6x - 7 < 0$
- $x^2 - 6x - 16 < 0$
- $x^2 + 11x + 18 < 0$



Solve each quadratic inequality and show the solution on a number line.

- $x^2 - 2x > 48$
- $x^2 - 3x \leq 10$
- $5x \geq 36 - x^2$
- $x^2 < 9x + 22$

1 2 3 4 5 6 7 8 9