Problem:

Solve for all values of the parameter.

$3x + 9 < m^2 - mx$.

Solution:

$3x + 9 < m^2 - mx \Rightarrow 3x + mx + 9 - m^2 < 0, x(m+3) + (3-m)(3+m) < 0 \Rightarrow (m+3)(x+3-m) < 0$

$when\ m = -3 \Rightarrow 0 < 0\ a\ contradiction \Rightarrow there\ are\ no\ solutions. When\ m < -3 \Rightarrow m + 3 < 0 \Rightarrow$

$\Rightarrow x + 3 - m > 0 \Rightarrow x > m - 3 \Rightarrow the\ solution\ to\ the\ inequality\ will\ be\ (m-3; +\infty).$

$When\ \ m > -3 \Rightarrow m + 3 > 0 \Rightarrow x < m - 3 \Rightarrow the\ solution\ to\ the\ inequality\ will\ be\ (-\infty; m-3).$

Answer: $m < -3, the\ solution\ is\ (m-3; +\infty), m = -3, no\ solutions, m > -3, the\ solution\ is\ (-\infty; -3).$