f(n) = O(g(n)) if there exist constants (c > 0) and (n_0 > 0) such that for all (n >= n_0),
f(n) <= c * g(n)
f(n) = 6n^2 + 16 and g(n) = n^2
Choose c = 7. Then,
6n^2 + 16 <= 7n^2 = 16 <= n^2
Solving 16 <= n^2 gives n >= 4
Thus, take n_0 = 4. For all n >= n_0, 6n^2 + 16 <= 7n^2
Therefore, 6n^2 + 16 = O(n^2).

The statement is correct.