CS455=> Wk4HW2

Please use Mater Theorem to analyze the following recursion:

$$T(n) = 7 * T(n/2) + 500 * n^2$$

a = 7

b = 2

d = 2 i.e. power of n in f(n) polynomial = 500 it is a constant to ignore

b^d = 2^2 =4

if a > b^d = 7 > 4

T(n) = theta(n^ log (to the base b) a)

= theta(n^log (to the base 2)7)

Log 7 to the base 2 = 2.807

Answer => T(n) = theta (n^ 2.807)

If we floor value 2.807 to 2

Log 7 to the base 2 = 2

T(n) = theta (n^2)

If we round value 2.807 to 3

T(n) = theta(n^3)