Homework 1

**a = 2, b = 2,**

Check:

So… , then using Case 3

***Case 3 was applied in this problem, because f(n) = was a polynomial that is greater than , because , so the solution uses f(n) as defined in Case 3.***

**a = 1, b = ,**

Check:

So… , then using Case 3

***Case 3 was applied in this problem, because f(n) = n was a polynomial that is greater than , because .***

**a = 16, b = 4,**

Check:

So… , then using Case 2 thus the solution form can be applied to the solution to produce the appropriate model…

***Case 2 was applied in this problem, because a = b = 2 and = 0; so, neither Case 1 nor Case 3 could be applied because they require > 0.***

**a = 7, b = 3,**

Check:

So… , then using Case 3

***Case 3 was applied in this problem, because f(n) = was a polynomial whose power is greater than that of .***

**a = 7, b = 2,**

Check:

So… , then using Case 1

***Case 1 was applied in this problem, because f(n) = was a polynomial whose power is less than that of , so the solution uses the polynomial of the form as defined in Case 1.***

**a = 2, b = 4,**

Check:

So… , then using Case 2 , thus the appropriate model for the solution…

***Case 2 was applied to this problem, because a = b = and which didn’t conform to the rules of Case 1 nor Case 3 which require .***

**a = 3, b = 2,**

Check:

So… , then using Case 1

***Case 1 was applied to this problem, because was a polynomial whose power is less than that of , because grows slower then , which shows that it is both asymptotically larger as well as polynomially.***

**a = 4, b = 2,**

Check:

\* , so

So… , then using Case 3

***Case 3 was applied to this problem, because was a polynomial whose power is greater than that of , so the solution is f(n) as defined in Case 3.***