Hello Support,

Both problems have to be done in racket, java and C# after looking at the assignment.

**Write a program to solve the following problem:**

Lieutenant Uhura is visiting the space station *K7* from the *USS Enterprise*.  While there, she meets a man named Cyrano Jones who sells her a pet: a ball of fur called a Tribble.  Doctor McCoy later examines the Tribble and makes the following observations:

* Tribbles are born pregnant and reproduce asexually.
* Tribbles never die except by poisoning.
* After twelve hours of life—and every twelve hours thereafter—a Tribble will give birth to a litter of ten baby Tribbles.

Assuming the Tribble that Lieutenant Uhura purchased was a newborn and it was the only one brought back from the space station, after three Earth days, how many Tribbles will there be on the *Enterprise*?  After four days?  Your program should be able to predict the number of Tribbles after any length of time (in hours).

*Examples:*
(tribbles 0)  ==> 0  # the original Tribble
(tribbles 12) ==> 11 # the original Tribble and its 10 offspring
(tribbles 24) ==> 121
(tribbles 36) ==> 1331
(tribbles 48) ==> 14641
(tribbles 60) ==> 161051

**\*Vectors**

Write a program to solve the following puzzle:

Dr. Z the ruler of the ancient kingdom of Joejb has her political foes locked up in individual cells in her dungeon. There are a total of 100 cells. On their Independence day as all the Joejbians were celebrating Dr. Z decided to release some of her political prisoners. But being the maverick she was she does the following: She goes to the first cell and opens it, she goes to 2nd and opens and she continues to open the 3rd, 4th ... all the way to the 100th cell. She then comes back to the 2nd cell and closes it. Shes closes the 4th and in steps of 2 she closes the 6th, 8th ... 98th and 100th cells. She then comes to the 3rd cell and this times in steps of 3 she visits each cell (3rd, 6th, 9th ...) and if the cell is open she closes it and if its closed she opens it. She repeats this process of opening closed cells and closing open cells in steps of 4, 5 ... all the up to a step of 100. In the end she decrees that all the prisoners in the cells that remain open are free to go.

Who are those lucky prisoners (ie what are their cell numbers)?

 (\* 11 11)

 (\* 11 11 11)

 (\* 11 11 11 11)

 (\* 11 11 11 11 11)

 (\* 11 11 11 11 11 11)

 (\* 11 11 11 11 11 11 11)

 (\* 11 11 11 11 11 11 11 11))

;; tribbles : number-> number

 ;; computes the original tribble plus its 10 offsprings

 ;; for a given number of hours.

 ;; every 12 hours is current results \* 11

 ;; till it reaches 96 hours

 ;; EXAMPLE

 ;; the "value of tribbles 0 is 0". The value of cell 1 is 1

 ;; the "value of tribbles 12 is 11".

 ;; the "value of tribbles 24 is 121".

 ;; the "value of tribbles 36 is 1331".

 ;; the "value of tribbles 48 is 14641".

 ;; the "value of tribbles 60 is 161051".

 ;; the "value of tribbles 72 is 1,771,561".

 ;; the "value of tribbles 84 is 19,487,171".

 ;; the "value of tribbles 96 is 214,358,881".

(define (tribbles h)

 (\* 0 0))

 > (tribbles 0)

0

> (+ 1 10(tribbles 12))

11

> (\* 11 1(+ 11(tribbles 24)))

121

> (\* 11 11(+ 11 (tribbles 36)))

1331

> (\* 11 11 11 (+ 11 (tribbles 48)))

14641

> (\* 11 11 11 11 (+ 11 (tribbles 60)))

161051

> (\* 11 11 11 11 11 (+ 11 (tribbles 72)))

1771561

> (\* 11 11 11 11 11 11 (+ 11 (tribbles 84)))

19487171

> (\* 11 11 11 11 11 11 11 (+ 11(tribbles 96)))

214358881