Homework 2

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Q1

```
x = c
(1970,1988,1991,1996,1998,2004,2009,2014)
y =
c(262144,2097152,16777216,268435456,10737
41824,4294967296,8589934592,17179869184)
plot(x,y)
```

Q2

Memory.csv

year	1970	1971	1972	1973	1974	1975	1976	1977
Byte	262144	262144	262144	262144	262144	262144	262144	262144
year	1978	1979	1980	1981	1982	1988	1989	1990
Byte	262144	262144	262144	262144	262144	2097152	2097152	2097152
year	1991	1992	1993	1994	1995	1996	1997	1998
Byte	16777216	16777216	16777216	16777216	16777216	2.68E+08	2.68E+08	1.07E+09
year	1999	2000	2004	2009	2014			
Byte	1.07E+09	1.07E+09	4.29E+09	8.59E+09	1.72E+10			

Q2

- memory.df = read.csv("memory.csv",header = TRUE)
- plot(memory.df$Byte~memory.df$year)
- splines.reg.l1 = smooth.spline(x = memory.df$year, y = memory.df$Byte, spar = 0.2)
- splines.reg.l2 = smooth.spline(x = memory.df$year, y = memory.df$Byte, spar = 1)
- splines.reg.l3= smooth.spline(x = memory.df$year, y = memory.df$Byte, spar = 2)
- lines(splines.reg.l1, col = "red", lwd = 2)
- lines(splines.reg.l2, col = "green", lwd = 2)
- lines(splines.reg.l3, col = "blue", lwd = 2)

Q3

- x = 3
- lambda = 2
- dpois(x,lambda) # probability mass function

- x = 0
- lambda = 5
- dpois(x,lambda) # probability mass function