

Statistics 3080
Homework 1
David Smith

Problem 1a

```
> ans_1a <- rep("a", 4)
> ans_1a
```

```
[1] "a" "a" "a" "a"
```

Problem 1b

```
> ans_1b <- seq(2, 100, 2)
> ans_1b
```

```
[1]  2  4  6  8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38
[20] 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76
[39] 78 80 82 84 86 88 90 92 94 96 98 100
```

Problem 1c

```
> ans_1c <- rep(0:3, c(4,3,2,1))
> ans_1c
```

```
[1] 0 0 0 0 1 1 1 2 2 3
```

Problem 1d

```
> ans_1d <- rep(1:3, each=3)
> ans_1d
```

```
[1] 1 1 1 2 2 2 3 3 3
```

Problem 1e

```
> ans_1e <- c(seq(1,5), rev(seq(1,4)))
> ans_1e
```

```
[1] 1 2 3 4 5 4 3 2 1
```

Problem 1f

```
> ans_1f <- 1:10
> ans_1f
```

```
[1] 1 2 3 4 5 6 7 8 9 10
```

Problem 1g

```
> ans_1g <- 1 / ans_1f
> ans_1g
```

```
[1] 1.0000000 0.5000000 0.3333333 0.2500000 0.2000000 0.1666667 0.1428571
[8] 0.1250000 0.1111111 0.1000000
```

Problem 1g

```
> ans_1g <- 1 / ans_1f
> ans_1g
```

```
[1] 1.0000000 0.5000000 0.3333333 0.2500000 0.2000000 0.1666667 0.1428571
[8] 0.1250000 0.1111111 0.1000000
```

Problem 1h

```
> ans_1h <- (1:6)^3
> ans_1h
```

```
[1] 1 8 27 64 125 216
```

Problem 1i

```
> ans_1i <- 1964:2003
> ans_1i
```

```
[1] 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978
[16] 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993
[31] 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003
```

Problem 1j

```
> ans_1j <- seq(0, 1000, 25)
> ans_1j
```

```
[1] 0 25 50 75 100 125 150 175 200 225 250 275 300 325 350
[16] 375 400 425 450 475 500 525 550 575 600 625 650 675 700 725
[31] 750 775 800 825 850 875 900 925 950 975 1000
```

Problem 2a

```
> poker_vect = c(140,-50,20,-120,240)
> roulette_vect <- c(-20,-50,100,-225,20)
```

Problem 2b

```
> tot_earn <- poker_vect + roulette_vect
> tot_earn
```

```
[1] 120 -100 120 -345 260
```

Problem 2c

```
> sum(tot_earn)
```

```
[1] 55
```

Problem 2d

```
> (sum(poker_vect) / sum(tot_earn)) * 100
```

```
[1] 418.1818
```

Problem 2e

```
> mean(roulette_vect)
```

```
[1] -35
```

Problem 2f

```
> mean(poker_vect) > mean(roulette_vect)
```

```
[1] TRUE
```

```
> print("Dave's average daily earnings is higher")
```

```
[1] "Dave's average daily earnings is higher"
```

Problem 2g

```
> roulette_won <- roulette_vect > 0
> days <- c("Monday", "Tuesday", "Wednesday", "Thursday", "Friday")
> days[roulette_won]
```

```
[1] "Wednesday" "Friday"
```

Problem 2h

```
> roulette_vect[roulette_won]
```

```
[1] 100 20
```

References:

- N/A