

BIA656 - HW1 - Assignment 1

- Problem 1(Explore R)
- a) Create the following vectors in R.

```
In [1]: a <- NULL
        for (i in 1:32){
          item = i * 5
          a <-c(a, item)
        }
        a
```

```
5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90  95  100
105 110 115 120 125 130 135 140 145 150 155 160
```

```
In [2]: b <- NULL
        for (i in 1:32){
          item = 88 - i
          b <- c(b, item)
        }
        b
```

```
87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67
66 65 64 63 62 61 60 59 58 57 56
```

- b) Use vector arithmetic to multiply these vectors and call the result d.

```
In [3]: d <- a * b
        d
```

```
435 860 1275 1680 2075 2460 2835 3200 3555 3900 4235 4560 4875 5180
5475 5760 6035 6300 6555 6800 7035 7260 7475 7680 7875 8060 8235
8400 8555 8700 8835 8960
```

- c) What are the 19th, 20th, and 21st elements of d)?

```
In [4]: d[19]
        d[20]
        d[21]
```

```
6555
```

```
6800
```

```
7035
```

- d)What are all of the elements of d) which are less than 2000?

```
In [5]: e <- NULL
        for (i in 1:length(d)){if(d[i] <= 2000){e <- c(e, d[i])}}
        e

435  860  1275  1680
```

- e)How many elements of d) are greater than 6000?

```
In [6]: f <- NULL
        for (i in 1: length(d)){if(d[i] >= 6000){f <- c(f, d[i])}}
        f

length(f)

6035  6300  6555  6800  7035  7260  7475  7680  7875  8060  8235  8400  8555
8700  8835  8960

16
```

- Compute the following statistics of d):
- f)Sum

```
In [7]: sum(d)

175120
```

- g)Median

```
In [8]: mean(d)

5472.5
```

- h)Standard deviation

```
In [9]: sd(d)

2608.56282270525
```

#Problem 1 End