

R PROGRAMMING

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1 a). Consider two vectors, x, y $x=c(4,6,5,7,10,9,4,15)$ $y=c(0,10,1,8,2,3,4,1)$ What is the value of: $x*y$

```
x<-c(4,6,5,7,10,9,4,15)
```

```
y<-c(0,10,1,8,2,3,4,1)
```

```
> print(x*y)
```

```
[1] 0 60 5 56 20 27 16 15
```

1 b). Consider two vectors, a, b

$a=c(1,2,4,5,6)$ $b=c(3,2,4,1,9)$ What is the value of: $cbind(a,b)$

Source Code:

```
a<-c(1,2,4,5,6)
```

```
b<-c(3,2,4,1,9)
```

```
cbind(a,b)
```

```
a b
```

```
[1,] 1 3
```

```
[2,] 2 2
```

```
[3,] 4 4
```

```
[4,] 5 1
```

```
[5,] 6 9
```

2. Vector v is $c(1,2,3,4)$ and list x is $list(5:8)$, what is the output of $v*x[1]$?

```
v<-c(1,2,3,4)
```

```
x <- list(5:8)
```

```
print(v*x[1])
```

Error in `v * x[1]` : non-numeric argument to binary operator

3. Vector `v` is `c(1,2,3,4)` and list `x` is `list(5:8)`, what is the output of `v*x[[1]]`?

Source Code:

```
v<-c(1,2,3,4)
```

```
x <-list(5:8)
```

```
print(v*x[[1]])
```

```
>print(v*x[[1]])
```

```
[1] 5 12 21 32
```

4. `X` is the vector `c(5,9.2,3,8.51,NA)`, What is the output of `mean(x)`?

Source Code:

```
v<-c(5,9.2,3,8.51,NA)
```

```
print(mean(v))
```

```
>print(mean(v))
```

```
[1] NA
```

5. Give a function in R that replaces all missing values of a vector `x` with the sum of elements of that vector?

```
replace<-function(v){
```

```
  ifelse(is.na(v),sum(v,na.rm = T),v)
```

```
}
```

```
replace(v=c(1,2,3,NA,5,6,NA,8))
```

```
>replace(v=c(1,2,3,NA,5,6,NA,8))
```

```
[1] 1 2 3 25 5 6 25 8
```