

MATH 542 | Assignment 1

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1/16/2016

Problem 1

$$|2^3 - 3^2|$$

```
abs(2**3-3**2)
```

```
## [1] 1
```

Problem 2

$$e^e$$

```
exp(exp(1))
```

```
## [1] 15.15426
```

Problem 3

$$2.3^8 + \log(7.5) - \cos \frac{\pi}{\sqrt{2}}$$

```
2.3**8 + log(7.5) - cos(pi/sqrt(2))
```

```
## [1] 785.7305
```

Problem 4

```
A <- cbind(c(1,2,4),c(2,1,7),c(3,6,2),c(2,4,5))
B <- cbind(c(1,0,2,1), c(3,1,4,5), c(5,3,7,1), c(2,4,3,2))
# A <- matrix(c(1,2,4,2,1,7,3,6,2,2,4,5), nrow=3, ncol=4)
# B <- matrix(c(1,0,2,1,3,1,4,5,5,3,7,1,2,4,3,2), nrow=4, ncol=4)
B %*% t(A)
```

```
##      [,1] [,2] [,3]
## [1,]  26  43  45
## [2,]  19  35  33
## [3,]  37  62  65
## [4,]  18  21  51
```

```
A %*% solve(B)
```

```
##      [,1]      [,2]      [,3]      [,4]
## [1,] -0.5 0.1739130 0.6956522 0.1086957
## [2,] -2.5 0.6086957 2.4347826 -0.3695652
## [3,] -6.0 0.3043478 4.2173913 1.5652174
```

Problem 5

```
v1 <- c(2,5,6,7)
v2 <- c(-1,3,-1,-1)
sum(v1*v2)
```

```
## [1] 0
```