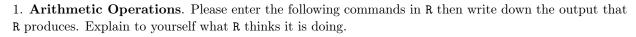


## Introductory R Exercises



- a) 2.0 + 3.1
- b) 2.0 \* 3.1
- c) 3.0  $\hat{}$  2.0
- $d) 9.0^00.5$
- e) sqrt(9.0)
- f) exp(1)
- g) sin(pi)
- h) cos(pi/2)
- i) tan(pi/2)
- 2. Vector Operations. Repeat Exercise 1 for the following.
  - a) x < -c(1, 0, -2)
  - b) x
  - c) y <- c(-1, 4.5, 3)
  - d) x + y
  - e) x + 2
  - f) x\*y
  - g) x  $\hat{}$  y
  - $h) \exp(x)$
  - i) 1:10
  - j) seq(1, 21, by=5)

- 3. Statistics. Repeat Exercise 1 for the following. a) x < - seq(-5, 5)b) mean(x) c) sd(x)d) range(x) e) length(x) f) Repeat a)-e) using y <- seq(-1, 1, by=0.2). Compare your results. 4. Experiments a) Enter sample(10, 4) several times. What is R doing? b) Repeat a) using different values in place of 10 and 4. What happens if you enter sample(10, 11)? c) Enter sample(c("H", "T"), 5, replace=TRUE). What is R doing? d) Use R to simulate flipping a coin 100 times. 1000 times. 5. Graphics a) Enter the following and sketch the result. x < - seq(-4,4,by=0.1)plot(x, dnorm(x), type="1", cex.lab=1.5, cex.axis=1.5, xlim=c(-4,4), ylim=c(0,0.5))
  - b) Explain what the xlim and ylim parts of the command above mean.
  - c) Experiment to try to figure out what the cex.lab and cex.axis parts of the command do.