



## Quiz: The Normal Curve

1. Sketch then, without using a calculator, estimate the specified area under the normal curve.

a)  $z > 2$

b)  $z > 2$

c)  $-1 < z < 2$

d)  $1 < z < 2$

e)  $z < 10$

f)  $z < -7$

g)  $-3 < z < 1$

h)  $|z| < 1$

2. Use the `pnorm` function in `R` to find the specified areas under the normal curve. Write down the commands that you use.

a)  $z < -1.5$

b)  $z > 1.8$

c)  $z < 7.75$

d)  $z < -5.3$

e)  $-1.25 < z < 2.25$

f)  $1.8 < z < 2.0$

3. Suppose that math SAT scores average out to 520 with a standard deviation of 20. Assume that the histogram of scores follows a normal distribution.
- a) About what percent of scores were between 500 and 540?
  - b) About what percent of scores were below 560?
  - c) About what percent of scores were over 580?
  - d) What score is better than 90% of all scores? (Hint: `qnorm`.)
4. Errors in the measurement of a certain check weight average out to 0.0065 kg plus or minus about 0.0002 kg. Assume that the histogram of measurement errors follows a normal distribution.
- a) What is the chance of getting an error measurement greater than 0.0068?
  - b) What is the chance of getting an error measurement greater than between 0.0064 and 0.0066?
  - c) About what percent of measurements were over 0.0070?
  - d) What measurement is larger than 90% of all measurements? (Hint: `qnorm`.)