Worksheet: Areas Under the Normal Curve

1. You can calculate the area under the normal curve and to the left of a specified value z in `R` using the command `pnorm(z)`. Sketch the following regions then use `R` to find their areas.

a) to the left of $z = 0$

b) between -1 and 1

c) between -2 and 2

d) between -3 and 3

e) to the left of 1.5

f) to the right of 1.5

g) $-2.1 < z < 2$

h) $z > 4$

Shepherd UNIVERSITY

Math 314: Statistics

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h) $z > 4$

2. To find the z score for which p percent of the area under the normal curve is to the left of z, use the command `qnorm(p)`. Find the z value then sketch the region.

a) area to the left of z is 50%

b) area to the left of z is 75%

c) area to the left of z is 25%

d) area to the righ of z is 5%

e) area to the righ of z is 65%

f) area between $-z$ and z is 25%

3. In 2005, men averaged about 540 on the Math SAT. The SD was about 120. Sketch a graph of the histogram of SAT scores. Estimate the percentage of men who scored over 700. About what range includes 75% of the SAT scores were below what value?

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