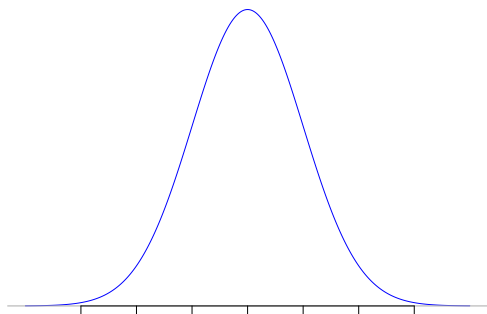


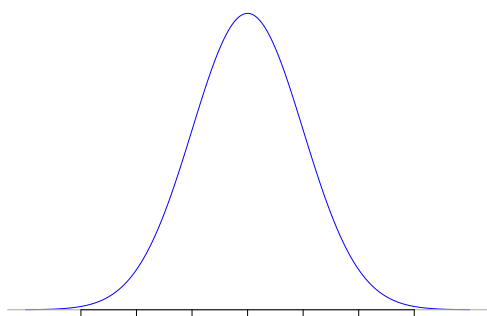
Worksheet: Normal Distributions and Z-scores

1. In each case (i) label the tick marks of the density curve for $N(0, 1)$; (ii) sketch the area under the curve corresponding to the proportion given; and (iii) determine this proportion using technology or the tables.

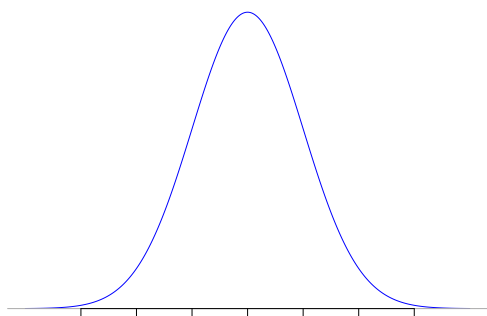
(a) $P(z < 1.12)$



(b) $P(z > 0.94)$

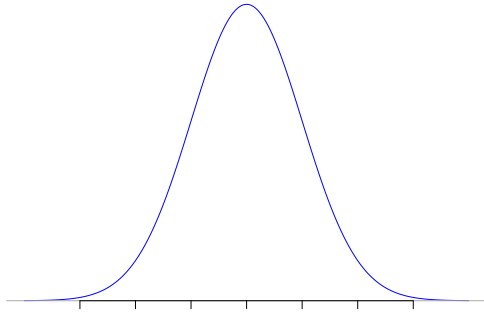


(c) $P(1 < z < 2.5)$

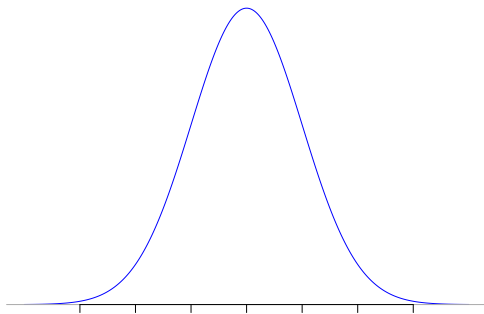


2. In each case (i) label the tick marks of the density curve for the given normal distribution $N(\mu, \sigma)$, (ii) sketch the area under the curve corresponding to the proportion given; (iii) convert to z -scores; and (iv) determine the proportion using technology or the tables.

(a) In $N(14, 4)$, find $P(X > 16.4)$



(b) In $N(10, 3)$, find $P(8 < X < 11)$



3. The household income in a certain community is normally distributed with a mean of \$58,000 and a standard deviation of \$10,000. Determine the proportion of households with incomes exceeding \$70,000.