Probability Worksheet

1. Compute the following probabilities

    *   In tossing one coin twice, find *P(no head)*
    *   In throwing two dice, find *P(sum is 4 or more)*
    *   In drawing one card randomly from a standard 52-card deck, find *P(card is Ace)*
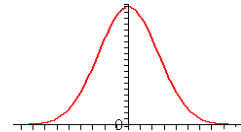
2. A (hypothetical) frequency distribution for the age of people in a survey, the categories have the following probabilities:

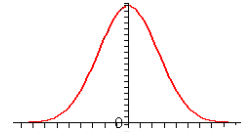 | Category | Probability |
    |---|---|
    | 0 – 18 | 0.15 |
    | 19-40 | 0.25 |
    | 41-65 | |
    | 65 and older | 0.3 |

    *   One number is missing – what is that number?
    *   What is the chance that a randomly selected person is 40 years or younger?

3. The "Normal Calculator" of StatCrunch (under the "Stats" menu) can be used to compute probabilities for a variable z, assumed to have a Normal Distribution $N(\mu, \sigma)$, such as for example N(0,1) (the Standard Normal Distribution). First shade the parts in the probability distribution that corresponds to the probability you compute to estimate your answer. Then use the StatCrunch "Normal" calculator to find the probabilities and check if it matches your estimates:
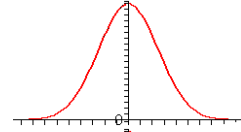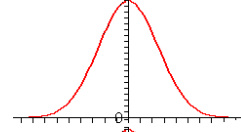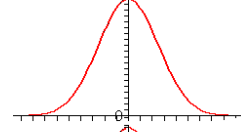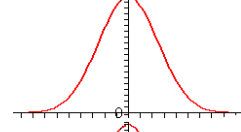
$P(z < 1.2)$

$P(z > -1.3)$

$P(z > 1.4)$

$P(z < -1.5)$

$P(1 < z < 2)$

$P(-2 < z < -1)$

$P(-1 < z < 2)$