worksheet use 'dprd' functions

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Ex1

Flip a fair coin 10 times. X denotes the numbers of heads. Use R to find the following (hint: Binomial distribution),

a) Find $P(X = 6)$ (i.e. the probability of obtaining exact 6 heads)
b) Find $P(X = 4 or X = 5)$
c) Find $P(X \leq 3)$
d) Find $P(X \geq 6)$

Ex2

Z is a standard normal random variable. USe R to find the following,

a) Find the $P(Z < -2.15)$ (i.e. probability that X takes values great than 2.15).
b) Find $P(Z > 2.54)$
c) Find $P(-1.96 < Z < 1.96)$
d) Find the value of Z such that the left area under the PDF curve to Z is 0.025.
e) Find the value of Z such that the right area to Z is 0.05.
f) Find the value of Z such that the "two tails"" area (i.e. the left area to $-z$ and right area to z) is 0.01.

Ex3

a) Use **rnorm** to generate 200 random numbers from standard normal distribution.

b) Then plot a histogram of these random numbers. Does the shape look like a bell-shape?

c) Randomly select 100 numbers without replacement from the 200 numbers you generated. Calculate the mean and standard deviation of the selected 100 numbers.