You are advised to look again at the section entitled *General advice on CMAs* at the start of CMA 41.

Questions 1 to 6 are based on material in *Chapter 3*.

1 Choose from the following options the mean and variance of the discrete uniform distribution with parameter $n = 4$.

$\mu = \frac{n+1}{2}$ $V(x) = \frac{n^2-1}{12}$

A	2.5, 1.25	B	2.5, 1.5	C	2.0, 1.25	D	2.0, 1.5
E	2.5, 0.75	F	3.0, 0.75	G	2.5, 2.25	H	2.5, 2.5

2 In successive rolls of a fair six-sided die, what is the probability that a 5 is thrown for the first time at the fourth roll?

$P = (5/6)^3 \times (1/6)$

A	0.5981	B	0.0965	C	0.1157	D	0.6904
E	0.1667	F	0.5177	G	0.0804	H	0.5787

3 For the probability distribution given in Table 3.5 on page 100 of the course text, choose from the following options the population median.

Check

A	2	B	3	C	4	D	5
E	2.5	F	3.5	G	3.95	H	3.75

4 Find the mean and the median of the triangular distribution with parameter $\theta = 300$. (Choose two options from the list below.)

Mean $= \theta/3$

A	100	B	200	C	150	D	50
E	87.87	F	40.19	G	222.22	H	173.21

$\frac{1}{2} = 1 - \left(1 - \frac{\omega}{300}\right)^2$

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$\frac{1}{\sqrt{2}} = 1 - \frac{\omega}{300}$

$\frac{\omega}{300} = 1 - \frac{1}{\sqrt{2}}$

$\omega = 300\left(\frac{\sqrt{2}-1}{\sqrt{2}}\right)$

5 Find the mean and the standard deviation of the geometric distribution with parameter $p = 0.1$. (Choose two options from the list below.)

mean $= 1/p = \frac{1}{0.1} = 10$

sd $= \sqrt{q/p^2} = \sqrt{0.9/0.1} = 9.5$

A	0.100	B	10.000	C	0.111	D	0.351
E	3.000	F	9.000	G	9.487	H	90.000

6 Choose from the following options the command that will return the 90% point of the binomial distribution with parameters $n = 30$, $p = 0.7$.

A	`Binom(0.9,30,0.7)`	B	`binomQ(0.1,0.7,30)`
C	`binomQ(0.1,30,0.7)`	D	`binomQ(0.9,30,0.7)`
E	`binom(0.1,30,0.7)`	F	`Binom(0.1,30,0.7)`
G	`BinomQ(0.1,30,0.7)`	H	`brand(30,0.7,0.1)`