M 362K Pre-Class Work for 2/10

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3-2

The distribution is shown below:

z	$Pr(Z = z)$
1	0.1
2	0.1
3	0.1
4	0.1
5	0.1
6	0.1
7	0.1
8	0.1
9	0.1
10	0.1

3-3

(a)

$Pr(S = 1) = \frac{18}{38}$

(b)

$Pr(S = 2) = \left(1 - \frac{18}{38}\right)^2 * \frac{18}{38} = \frac{900}{6859}$

(c)

The distribution is shown below:

s	$Pr(S = s)$
1	$\frac{18}{38}$
2	$\left(\frac{20}{38}\right) * \frac{18}{38}$
3	$\left(\frac{20}{38}\right)^2 * \frac{18}{38}$
$\vdots$	$\vdots$
n	$\left(\frac{20}{38}\right)^{n-1} * \frac{18}{38}$

3-5

(a)

The probability distribution is shown below:

s	2	3	4	5	6	7	8	9	10	11	12
$Pr(S = s)$	$\frac{1}{36}$	$\frac{2}{36}$	$\frac{3}{36}$	$\frac{4}{36}$	$\frac{5}{36}$	$\frac{6}{36}$	$\frac{5}{36}$	$\frac{4}{36}$	$\frac{3}{36}$	$\frac{2}{36}$	$\frac{1}{36}$

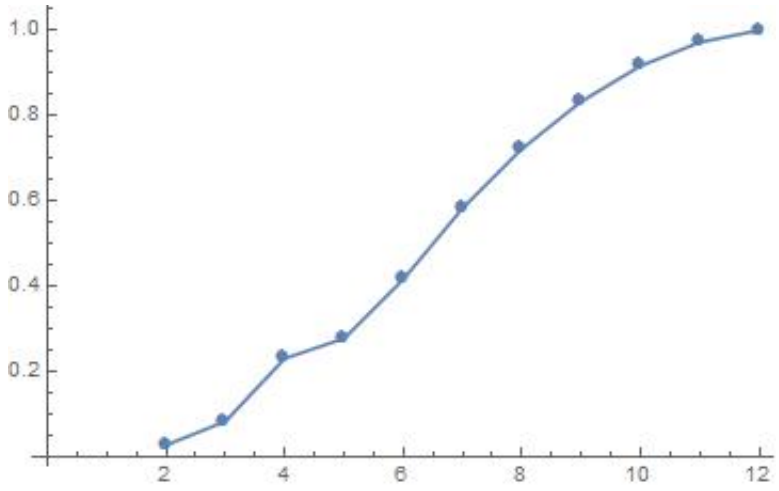

Figure 1: Ogive diagram for S

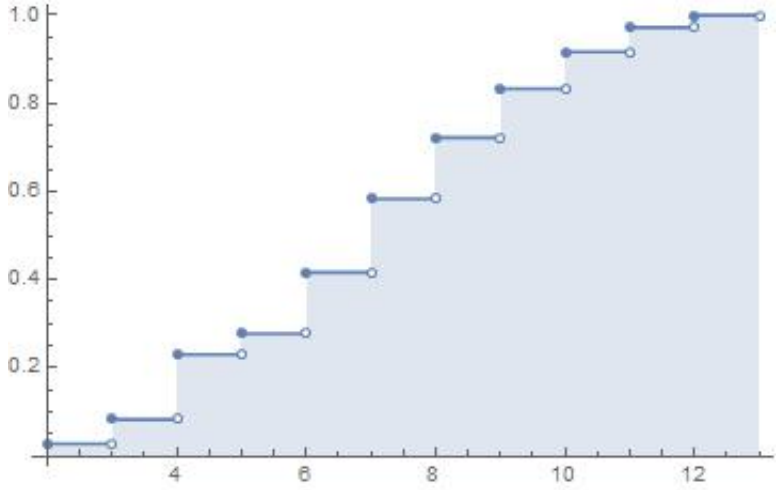

Figure 2: CDF diagram for S

(b)

The cumulative probability distribution is shown below:

s	2	3	4	5	6	7	8	9	10	11	12
$Pr(S = s)$	$\frac{1}{36}$	$\frac{3}{36}$	$\frac{6}{36}$	$\frac{10}{36}$	$\frac{15}{36}$	$\frac{21}{36}$	$\frac{26}{36}$	$\frac{30}{36}$	$\frac{33}{36}$	$\frac{35}{36}$	$\frac{36}{36}$

(c)

The ogive diagram is shown in Figure 1 and the CDF diagram is shown in Figure 2