

# Uniform Distribution

Name: .....

1. Fill in the formulas:

Equation	Prob of X	Expected Value (also the Mean)

2. First classify each distribution as (B)binomial, (G)geometric, (H)hypergeometric, (U)uniform, (N)normal. Then write out the equation for the situation.

Distribution Description	B/G/H/N/U	Equation
(a) Measuring the height of a mouse. The mean is 12 cm and the standard deviation is 2.5 cm		
(b) You call 18 people. They have a 40% chance of answering. What is the probability that under 3 people answer?		
(c) You call people until someone answers. If they have a 40% chance of answering, what is the expected number of calls you will need to make?		
(d) You are rolling a 12 sided dice in a Dungeons and Dragons game.		
(e) The number of rolls of a pair of dice until you get doubles.		
(f) Rolling a regular 6-sided dice.		
(g) You want to get a 3 when you roll the dice. You roll 7 dice at a time and see how many of them rolled a 3.		

3. A regular 6-sided dice is rolled.

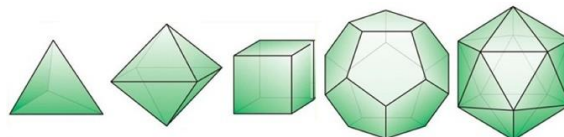
$X \sim \text{Uniform}(n= \text{_____})$

x	x=1	x=2	x=3	x=4	x=5	x=6
P(x)						

$P(x \leq 2) = \text{_____} + \text{_____}$   
 $= \text{_____}$

$E(x) =$

4. There are only five perfectly symmetrical polyhedrons: the tetrahedron (4 faces), the cube(6 faces), the octahedron (8 faces), the dodecahedron (12 faces) and the icosahedron (20 faces). Calculate the expected value for dice made in each of these shapes.



5. An 8-sided dice is rolled.

$X \sim \text{Uniform}(n = \underline{\hspace{2cm}})$

x	x=1	x=2	x=3	x=4	x=5	x=6	x=7	x=8
P(x)								

$$P(x \leq 2) = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

$$E(x) =$$

6. A spinner has ten equally sized sectors, numbered 1 through 10.

(a) What is the probability the spinner will land on 4?

(b) What is the probability the spinner will land on a prime number?

(c) What is the expected outcome to the nearest tenth?

7. For each box where it is possible: (a) write the formula, (b) sub in the values and (c) evaluate.

	$P(x=1)$	$E(x)$	$\sigma$
$X \sim \text{Uniform}(n = 5)$			
$X \sim \text{Geometric}(p = 0.4)$			
$X \sim \text{Binomial}(n = 5, p = 0.6)$			
$X \sim \text{HyperGeo}(n = 6, r = 3, a = 4)$			