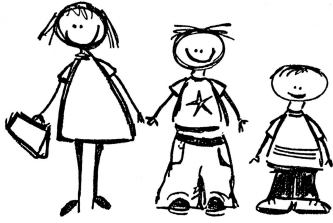Name: _____ Hour: _____ Date: _____

How many children are in your family?

Count up the number of children in your family (including yourself). Be sure to include all your stepbrothers/stepsisters and half-brothers/half-sisters.

Let X = the number of children. Suppose we choose someone from the class at random.

X	1	2	3	4	5	6	7	8
Probability								

1. Is this a valid probability model? Explain.

2. Is 5.7167 a possible value for X? Explain.

3. Make a histogram to display information with X on the horizontal axis, and describe its shape.

4. Describe in words what $P(X \geq 3)$ and then find $P(X \geq 3)$.

5. Describe in words what $P(X > 3)$ and then find $P(X > 3)$.

6. Find the average of the X values.

7. Does this value tell us the average number of children in the families of students in this class? If yes, explain. If no, why not?

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Discrete Random Variables

Important ideas:

Check Your Understanding

Home Alone is a series of American Christmas family comedy films created by John Hughes. There are 5 Home Alone movies. Below is a probability distribution of the number of Home Alone movies watched by a very large sample of high school students.

Number of Home Alone Movies Watched	0	1	2	3	4	5
Probability	0.15	0.42	0.32	?	0.02	0.01

a. Write the event "the student has seen 3 Home Alone movies" using probability notation. Then find this probability.

b. Explain in words what $P(X \geq 3)$ means. What is this probability?

c. Make a histogram of the probability distribution. Describe its shape.

d. Calculate and interpret the expected value of X.

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