Candle Center - Infinite Precalculus Name_____

Binomial Probability

Date_____ Period____

Find the probability of each event.

1) A basketball player has a 60% chance of making each free throw. What is the probability that the player makes exactly three out of six free throws?

2) A class has seven students. What is the probability that exactly four of the students were born on a weekday (Monday through Friday)?

3) A class has five students. What is the probability that exactly two of the students were born on a weekend?

4) A hotel has four elevators. One of them is a freight elevator. When pressing the button, one of the elevators randomly services your floor. If you use the elevators seven times, what is the probability that you use the freight elevator exactly four times?

5) An archer has a 25% chance of hitting the bullseye on a target. What is the probability that the archer will hit the bullseye at most three out of five times?

6) The desks in a classroom are organized into four rows of four columns. Each day the teacher randomly assigns you to a desk. You may be assigned to the same desk more than once. Over the course of six days, what is the probability that you are assigned to a desk in the front row at most four times?

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1) A basketball player has a 60% chance of making each free throw. What is the probability that the player makes exactly three out of six free throws?

$\frac{864}{3125} = 27.648\%$

2) A class has seven students. What is the probability that exactly four of the students were born on a weekday (Monday through Friday)?

$\frac{25000}{117649} \approx 21.25\%$

3) A class has five students. What is the probability that exactly two of the students were born on a weekend?

$\frac{5000}{16807} \approx 29.75\%$

4) A hotel has four elevators. One of them is a freight elevator. When pressing the button, one of the elevators randomly services your floor. If you use the elevators seven times, what is the probability that you use the freight elevator exactly four times?

$\frac{945}{16384} \approx 5.768\%$

5) An archer has a 25% chance of hitting the bullseye on a target. What is the probability that the archer will hit the bullseye at most three out of five times?

$\frac{63}{64} \approx 98.438\%$

6) The desks in a classroom are organized into four rows of four columns. Each day the teacher randomly assigns you to a desk. You may be assigned to the same desk more than once. Over the course of six days, what is the probability that you are assigned to a desk in the front row at most four times?

$\frac{4077}{4096} \approx 99.536\%$