Integrated 2   Name: **Key**

Simple Probability

1) What does P(some event happening) = 0 mean?

It will NOT happen

2) What does P(some event happening) = 1 mean?

It WILL happen

3) The owner of Pizza Palace kept track of the types of crusts used for the last 1000 pizza orders.

Thin Crust	540	Thick Crust	285
Pan Crust	138 ·	Stuffed Crust	37

a. What is the probability that the next customer will order thick crust? Find P(Thick Crust) Show your work.

$$P(\text{Thick Crust}) = \frac{285}{1,000} = \frac{57}{200} = .285 = 28.5\%$$

b. Find P(Pan Crust). Show your work.

$$P(\text{Pan Crust}) = \frac{138}{1000} = \frac{69}{500} = .138 = 13.8\%$$

c. Find P(NOT Stuffed Crust). Show your work.

$$P(\text{NOT Stuffed Crust}) = \frac{963}{1,000} = .963 = 96.3\%$$

d. · Based on this information, of the next 200 pizzas ordered, how many will have · THIN Crusts? Show your work.

$$\frac{540}{1000} = \frac{x}{200}$$

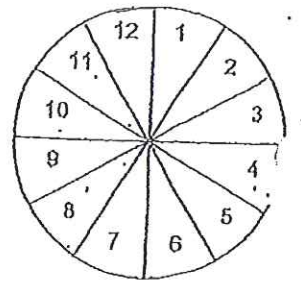$$1000x = 108,000$$

$$x = 108$$

108 Thin Crusts Pizza

4) Assume that you roll a fair die. (All numbers 1 – 6 are equally likely to be rolled.) Find each probability.

a. P(Three) $= \frac{1}{6}$

b. P(Two or Five) $= \frac{2}{6} = \frac{1}{3}$

c. P(Even Number) $\frac{3}{6} = \frac{1}{2}$

d. P(NOT One or Four) $\frac{4}{6} = \frac{2}{3}$

3). The spinner to the right is spun one time. Find each probability.

a. P(Even Number) $= \frac{6}{12} = \frac{1}{2}$

b. P(Multiple of Four) $= \frac{3}{12} = \frac{1}{4}$

c. P(NOT 5) $= \frac{11}{12}$

d. P(1, or 5, or 7) $\frac{3}{12} = \frac{1}{4}$

5) There are __52__ cards in a standard deck of playing cards.
There are __13__ cards in each suit. (Hearts, Diamonds, Spades, Clubs)

7) Assume that one card is drawn at random from the deck. Find each probability.

a. P(Queen of Diamonds) $= \frac{1}{52}$

b. P(Any Queen) $= \frac{4}{52} = \frac{1}{13}$

c. P(Spade) $= \frac{13}{52} = \frac{1}{4}$

d. P(NOT a Club) $= \frac{39}{52} = \frac{3}{4}$

e. P(4 of Hearts or a Diamond) $= \frac{2}{52} = \frac{1}{26}$

f. P(Ace or a Jack) $= \frac{8}{52} = \frac{4}{26} = \frac{2}{13}$

8) A vending machine has 5 different types of beverages. The owner of the machine kept track of the last 2,000 sales.

Fruit Punch	746	Aloha Punch	524
Apple Juice	98	Orange Juice	282
CranApple Juice	350		

a. What is the probability that the next can bought from this machine will be Aloha Punch? P(Aloha Punch)

$P(Aloha\ Punch) = \frac{524}{2,000} = \frac{262}{1,000} = \frac{131}{500} = .262 = 26.2\%$

b. P(Any Juice)

$P(Any\ Juice) = \frac{2000}{2,000} = 1$
$= 100\%$

c. P(Apple Juice or Aloha Punch)

$P(Apple\ Juice\ or\ Aloha\ Punch)$
$= \frac{622}{2000} = \frac{311}{1000} = .311 = 31.1\%$