QUIZ 11 NAME: _____

Answers: 1) ____ 2) ____3) ____4) ____5) ____6) ____7) ____

1) A sale bin has 4 different Beethoven CD's, 5 different Mozart CD's, and 3 different Tchaikovsky CD's. If Steen buys one of the Beethoven CD's, Gorm buys one of the Mozart CD's, and Sue buys one of the Tchaikovsky CD's, how many possible outcomes are there?

a) 48 b) 360 c) 12 (d) 60 e) None of the others. $4 \cdot 5 \cdot 3 = 60$

2) Three different cars (Ford, Oldsmobile, and Pontiac) have to be painted. Each car will be painted with one color. (That is, a car can not be painted with two colors.) There are 4 colors of paint which may be used (yellow, pink, blue, and black). A car decoration scheme is a specification of a color for each the three cars. How many different decoration schemes use at least two different colors of paint?

a) 24 b) 48 (c) 60 d) 72 e) None of the others. $\underbrace{4 \cdot 4 \cdot 4}_{\text{ALL COLOR SCHEMES}} - 4$ ← ALL WITH ONLY ONE COLOR

$= 64 - 4 = 60$

3) Three of Astrids friends - Gorm, Per, and Steen - will turn 25 years old on the same day in January. Astrid is going to give each one a different kind of gift. She is going to select gifts from a store that offers 8 different kinds of gifts. In how many ways can Astrid select a gift for Gorm, a gift for Per, and a gift for Steen?

a) 336 b) 56 c) 360 d) 172 e) None of the others. $8 \cdot 7 \cdot 6 = 56 \cdot 6 = 336$

4) An Urn contains 15 blue , 4 red, 17 black, and 9 white balls. One ball is drawn at random. What is the probability that the ball is white or red?

$15+4+17+9 = 45$

(a) $\frac{13}{45}$ b) $\frac{36}{45}$ c) $\frac{11}{45}$ d) $\frac{7}{45}$ e) None of the others. $\frac{13}{45}$ ← 13 balls are white or red.

5) An urn contains 3 red, 4 green, and 5 yellow balls. Two balls are withdrawn silmultaneously and at random. What is the probability that neither is green?

a) $\frac{13}{66}\frac{11}{33}$ b) $\frac{11}{33}$ c) $\frac{11}{33}$ (d) $\frac{14}{33}$ e) None of the others. $\frac{C(8,2)}{C(12,2)}$ ← # WAYS TO SELECT 2 NOT GREEN; ← # OF WAYS TO SELECT ANY 2

$= \frac{8 \cdot 7}{12 \cdot 11} = \frac{14}{33}$

6) An urn contains 3 red, 4 green, and 5 yellow balls. Two balls are withdrawn silmultaneously and at random. What is the probability that both balls are the same color?

(a) $\frac{19}{66}$ b) $\frac{17}{66}$ c) $\frac{180}{66}$ d) $\frac{60}{66}$ e) None of the others. $\frac{C(3,2)+C(4,2)+C(5,2)}{C(12,2)} = \frac{3+6+10}{12 \cdot 11} = \frac{19}{12 \cdot 11/2}$

7) A fair coin is flipped twice. What is the probability that both coins came up heads given that at least one came up heads?

(a) $\frac{1}{3}$ b) $\frac{1}{4}$ c) $\frac{3}{8}$ d) $\frac{1}{2}$ e) None of the others. $Pr(BH|AH) = \frac{Pr(BH \cap AH)}{Pr(AH)} = \frac{Pr(BH)}{Pr(AH)}$

$= \frac{1/4}{3/4} = \frac{1}{3}$

Answers: 1) ____ 2) ____3) ____4) ____5) ____6) ____7) ____