Permutations and Combinations – Worksheet #2

1) Louie has two extra tickets to the Reading Royals game. Four of his friends (Paul, Ron, Steve, and Tony) would like to go. How many different combinations does Louie have to choose from? SHOW EVERY WAY USING A CHART!

Paul – Ron
Paul – Steve
Paul – Tony
Ron – Steve
Ron – Tony
Steve – Tony

2) Phil has five different classes (Math, English, Science, Art, Health) this semester, and is failing three of them. How many combinations of failing classes are there? SHOW EVERY WAY USING A CHART!

MES
MEA
MEH
MSA
MSH
MAH
ESA
ESH
SAH

3) Cathy must select two lab partners for science class. Her choices are Anthony, Ben, Cameron, Doug, Evan, and Frank. How many different combinations of lab partners are possible? SHOW EVERY WAY USING A CHART!

AB
AC
AD
AE
AF
BC
BD
BE
BF
CD
CE
CF
DE
DF
EF

10
15
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4) Edward conducts an experiment using the flip of a coin, and a spin of the spinner. How many different outcomes are possible? SHOW EVERY WAY USING A CHART!

\[
\begin{array}{ll}
H - R & T - R \\
H - Y & T - Y \\
H - G & T - G \\
H - B & T - B \\
\end{array}
\]

5) The NFC East Division used to contain 5 teams (Eagles, Redskins, Giants, Cowboys, Cardinals) that played each other twice during the season. How many NFC division games were there? SHOW EVERY WAY USING A CHART!

\[
\begin{array}{llll}
ER \text{ and } ER & RG \text{ and } RG & GCar \text{ and } GCar \\
EG \text{ and } EG & RCow \text{ and } RCow & GCar \text{ and } GCar \\
ECow \text{ and } ECow & RCar \text{ and } RCar & CowCar \text{ and } CowCar \\
E Car \text{ and } E Car & & & \\
\end{array}
\]

6) Five teachers (Mr. Haag, Mr. Seidel, Mrs. Topper, Miss Delong, Mrs. Curcio) have entered a drawing for a free pizza. Two winners will be selected. How many combinations are possible? SHOW EVERY WAY USING A CHART!

\[
\begin{array}{lllll}
HS & ST & TD & DC \\
HT & SD & TC \\
HD & SC \\
HC & & & \\
\end{array}
\]

\[
10
\]