Module 3
Tuesday, November 6, 2018 12:57 PM

**Counting**

**Module 3 Worksheet 1**

1. **AC/DC**
   - Khaki
   - Olive
   - Brown
   - Green
   - 5 outfits

2. **Metallica**
   - Khaki
   - Olive
   - Brown
   - Green
   - 5 outfits

3. **Pink Floyd**
   - Khaki
   - Olive
   - Brown
   - Green
   - 5 outfits

4. **David Bowie**
   - Khaki
   - Olive
   - Brown
   - Green
   - 5 outfits

**Total: 20 outfits**

**2. Add in shoes**

Each of the previous outfits has 2 options for shoes.

20x2 = 40 total outfits

**3. How many sums?**

Minimum: 1+1 = 2

Maximum: 6+6 = 12

11 different sums.

**4. Same red & black die**

36 different options

```
1 2 3 4 5 6
2 2 3 3 3 3
3 4 4 4 4 4
```
11/12/2018

\[ \begin{array}{ccc}
1 & 2 & 3 \\
1 & 2 & 3 \\
\end{array} \]

\[ 6 \times 6 = 36 \]

6. Pizza toppings
   \[ a b c d e = \text{toppings} \]
   \[ \text{repeats} \]
   \[ a b b a c a d d a e q e \]
   \[ a c b c b c d b b e b \]
   \[ a d b d c d c d e c c \]
   \[ a e b e c e d e e d \]
   
   10 different 2-topping pizzas

3 toppings? - imagine this as the
   number of ways to leave 2 toppings off the pizza
   Then we get 10 pizzas

4 toppings
   \[ abcd \quad acde \]
   5 pizzas
   \[ abce \quad bcde \]
   \[ abde \]

5 toppings?
   only one possible pizza
   because you use all the possible toppings

Magic
Pascal's Triangle
With 6 possible toppings, there are 15 pizzas with 2 toppings.