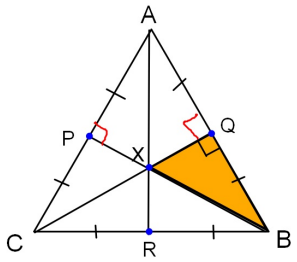
Bellwork Monday, May 12, 2014

1. Triangle ABC is and equilateral triangle, X is the centroid of Triangle ABC, and points P, Q, and R are midpoints. Find the probability that a point picked at random is in Triangle XQB.



$\frac{1}{6}$

2. From a pool of 18 people a jury of 12 people must be selected. How many ways can a jury be selected?

$_{18}C_{12} = 18,564$

3. After the jury is selected they need to choose a Foreman and an Alternate Foreman. How many ways can these two positions be filled once the jury is selected?

$_{12}P_{2} = 132$

4. At a restaurant you can build your own pizza by choosing from:

- 5 different meats
- 6 different vegetables
- 4 different cheeses.

How many pizzas can be made if you choose 2 different meats, 3 different vegetables, and 1 kind of cheese.

$_5C_2 \cdot {}_6C_3 \cdot {}_4C_1$

$10 \cdot 20 \cdot 4 = 800$

2 meats, 3 veg, 1 cheese

5. The probability that I wear a green shirt is $\frac{3}{8}$ and the probability that I wear a pair of black pants is $\frac{2}{7}$. Find the probability that tomorrow I wear a green shirt or I wear a pair of black pants. Give your answer as a fraction.

P(green shirt or black pants) =

$\frac{3}{8} + \frac{2}{7} - \frac{3}{8} \cdot \frac{2}{7}$

$\frac{21}{56} + \frac{16}{56} - \frac{6}{56} = \frac{31}{56}$

6. The probability that I'm out jogging is $\frac{2}{11}$ and the probability that I'm sitting on the couch is $\frac{5}{9}$. Find the probability I'm jogging or sitting on the couch. Give answer as a fraction.

P(jogging or sitting on the couch) =

$\frac{2}{11} + \frac{5}{9} = \frac{73}{99}$

$\frac{18}{99} + \frac{55}{99}$