Mid-chapter Review: Permutations and Combinations

1. Solve for n.

a.
$$\frac{n!}{(n-3)!} = 3n - 3$$

 $n(n-1)(n-2)(n-3)!$

$$\frac{n(n-1)(n-2)(n-3)!}{(n-3)!} = 3n-3$$

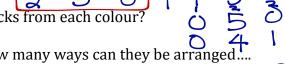
$$n(n-1)(n-2) = 3(n-1)$$

$$n(n-2) = 3$$
 > n=3 or
 $n^2 - 2n - 3 = 0$ > n=3 or

b.	$2n P(n+3,1) - 3 = \frac{9n+1}{3}$
	$2n(\frac{(n+3)!}{2})^{2} = \frac{9n+1}{2}$
	$\sqrt{(n+3-1)!}$ -3= $\frac{2}{2}$
	(h+2)(n+2)+1 - 9n+1
	$2n\left(\frac{(n+3)(n+2)!}{(n+2)!}\right)-3=\frac{9n+1}{2}$
	$4n^{2}+12n-6-9n-1=0$
	$4n^2 + 3N - 7 = 0$
	(4n +7)(n-1) = 0
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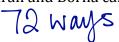
- (n-3)(n+1)=02. A baby has 3 blue blocks, 6 green blocks, and 2 yellow blocks. In how many ways can the baby choose 5 blocks.....
 - a. If the blocks may be chosen in any way? 12 WAYS
 - b. If the baby must have at least 2 blue blocks?

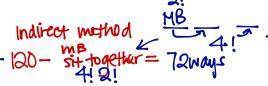
c. If the baby can choose 6 blocks and must have 2 blocks from each colour?



3. Given Mehran, Borna, Jen, Cory, and Ioan in the class. In how many ways can they be arranged...

c. If Mehran and Borna cannot sit beside each other?





- 4. There are 8 female and 7 male in our class. We have to choose a fund-raising committee composed of president, vice-president, treasurer, and secretary. In how many ways may this committee be chosen if.....
 - a. There are no restrictions?

32 760 WW/Sb. The committee must include at least 1 female?

$$P(15,4) - P(7,4) =$$

c. The president and vice-president must be different gender?

5. Willy has 5 tees, 6 pairs of pants, and 4 pairs of shoes. In how many ways can he dress himself?