Algebra IB "Permutation" Worksheet Name: _____

$_nP_r = \frac{N!}{(N-r)!}$	* NO CALCULATORS * You know you need the practice!	Period: ____ Date: 11

Setup and solve each Permutation (fill in boxes)

① 5 items taken 2 at a time

$\square P \square = \frac{\square!}{\square!} = \square$

② 7 items taken 4 at a time

$\square P \square = \frac{\square!}{\square!} = \square$

③ 8 items taken one at a time

$\square P \square = \frac{\square!}{\square!} = \square$

④ 4 items taken 4 at a time

$\square P \square = \frac{\square!}{\square!} = \square$

⑤ Define the Fundamental Counting Principle

⑥ 60 people in the sophomore class are eligible for 3 scholarships. How many different ways can they be awarded (show work on looseleaf)

⑦ There are 9 direct flights to Washington DC and 6 rental car agencies that you can rent to drive to the Smithsonian. How many ways can you get there? (looseleaf)

⑧ Red, Blue, green dice. How many possible rolls? (looseleaf)

⑨ 8 pants, 8 shirts, 60 ties, how many outfits? (looseleaf)

⑩ Define and solve using $_nP_r$ notation your own Permutation Problem (looseleaf).