

Section 6.1: cont'd

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11:25 AM

example: How many 4-digit PINs are there if repetition of digits is not allowed?

$$\underline{10} \quad \underline{9} \quad \underline{8} \quad \underline{7} = 5040$$

note: there's! another! way! to! calculate! this!

$$10 \cdot 9 \cdot 8 \cdot 7 = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$$
$$= \frac{10!}{6!}$$

← where 10 is the number of choices per slot and 4 is the number of slots

so $(10-4)!$ is the denominator