

Algebra 2 TUESDAY 11-20-12 Class Notes

② 3 blouses, 3 jackets, 2 skirts
outfits = ? 18 outfits

③ $\frac{9}{\substack{\uparrow \\ \text{digit} \\ \text{NOT } 0}} \cdot \frac{25}{\substack{\uparrow \\ \text{letter} \\ \text{NOT } O}} = \boxed{225 \text{ code combinations}}$

④ Nate, 7 day vacation
1 day jet skiing ? something else
1 day golfing

$${}_7P_2 = \frac{7!}{(7-2)!} = \frac{7!}{5!} = 7 \cdot 6 = \boxed{42}$$

$7! \Rightarrow$ total ways to arrange

ways to schedule

$5! \Rightarrow$ ways NOT used

Secret } ? only care about ways
to this } to schedule the jet ski
And golf days

- (5) Listen to 3 songs on a CD
from 12 selections.

$${}_{12}P_3 = \frac{12!}{(12-3)!} = \frac{12!}{9!}$$

$$12 \cdot 11 \cdot 10 = 1320 \text{ ways to arrange}$$

- (6) 6 school org. $\Rightarrow$ floats
1st, 2nd, 3rd be awarded?

$${}_6P_3 = \frac{6!}{(6-3)!} = 6 \cdot 5 \cdot 4 = 120 \text{ ways to award}$$

- (7) 4 students to library
21 students total, ways to choose

$${}_{21}C_4 = \frac{21!}{(21-4)! 4!} = \frac{21 \cdot 20 \cdot 19 \cdot 18}{4 \cdot 3 \cdot 2 \cdot 1}$$

$$= 5985 \text{ ways to select students}$$

$$\begin{array}{r} 35 \\ \times 19 \\ \hline 315 \\ 35 \\ \hline 665 \\ \times 9 \\ \hline 5985 \end{array}$$

⑧ \$1 off 3 boxes cereal
 5 brands, how many ways
 to choose 3 boxes.

$${}^5C_3 = \frac{5!}{(5-3)!3!}$$

$$= \frac{5 \cdot 4 \cdot \cancel{3}}{\cancel{3} \cdot 2 \cdot 1} = \boxed{10 \text{ ways to pick 3 boxes}}$$
