

Stats / Permutations

Problem Explanation

Show Another

Permutations

QUESTION

Eight athletes are running a race. A gold medal is to be given to the winner, a silver medal is to be given to the second-place finisher, and a bronze medal is to be given to the third-place finisher. Assume that there are no ties. In how many possible ways can the 3 medals be distributed?

(If necessary, consult a list of formulas.)

The order does matter in a race so we will use a permutation

$${}_nP_r = \frac{n!}{(n-r)!}$$

n = total
r = how many ways you are choosing

$${}_8P_3 = \frac{8!}{(8-3)!}$$

$$\frac{8 \cdot 7 \cdot 6 \cdot \cancel{5!}}{\cancel{5!}} = 8 \cdot 7 \cdot 6 = \boxed{336}$$

$${}_nP_r = \frac{n!}{(n-r)!}$$

	A	B	C	D	E	F
1						
2		Permutation	336	=PERMUT(8,3)		n = total
3						r = amount you are choosing

amples

	B	C	D	E	F
	Permutation	336	=PERMUT(8,3)		n = total
					r = amount you are choosing

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