



Calculate permutations with repeated elements

1

How many distinct ways can these cards be ordered? Show as a multiplication.



A
$$\frac{3 \cdot 2}{4 \cdot 3 \cdot 2}$$

B
$$\frac{3 \cdot 2}{2}$$

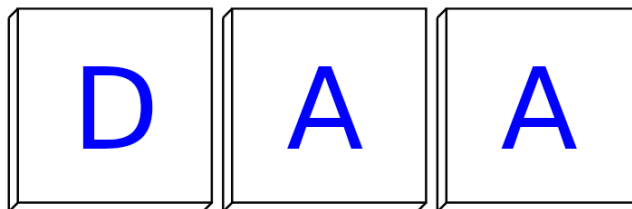
C
$$\frac{3 \cdot 2}{3 \cdot 2 \cdot 1}$$

D
$$\frac{5 \cdot 4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 2}$$

E
$$\frac{3 \cdot 2}{2 \cdot 3 \cdot 2}$$

2

How many distinct ways can these letter tiles be ordered? Show as a factorial.



A
$$\frac{3!}{3!}$$

B
$$\frac{3!}{3! \cdot 0!}$$

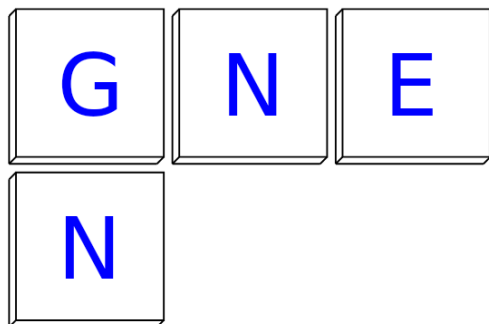
C
$$\frac{3!}{2! \cdot 3!}$$

D
$$\frac{3!}{2!}$$

E
$$\frac{3!}{2! \cdot 2!}$$

3

How many distinct ways can these letter tiles be ordered? Show as a multiplication.



A
$$\frac{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2}{2}$$

B
$$\frac{4 \cdot 3 \cdot 2}{2}$$

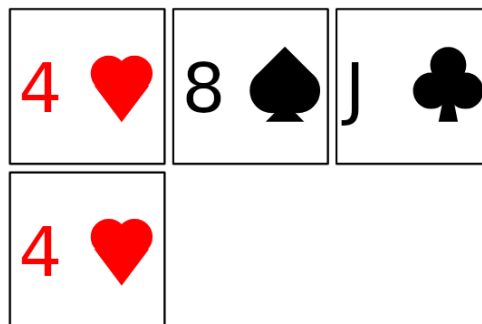
C
$$\frac{4 \cdot 3 \cdot 2}{3 \cdot 2}$$

D
$$\frac{4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 1}$$

E
$$\frac{3 \cdot 2}{2}$$

4

How many distinct ways can these cards be ordered? Show as a multiplication.



A
$$\frac{3 \cdot 2}{2}$$

B
$$\frac{4 \cdot 3 \cdot 2}{2 \cdot 3 \cdot 2}$$

C
$$\frac{4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 1}$$

D
$$\frac{4 \cdot 3 \cdot 2}{2}$$

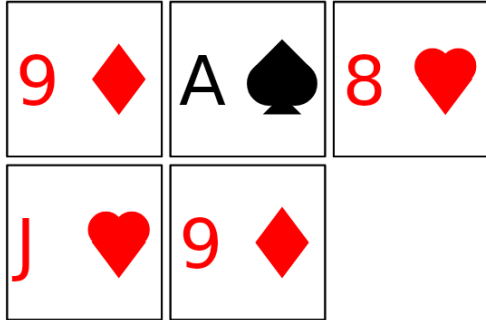
E
$$\frac{4 \cdot 3 \cdot 2}{2 \cdot 2}$$



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5

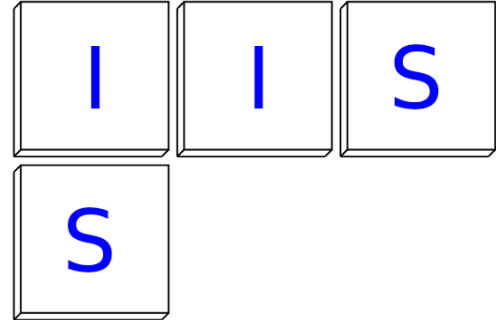
How many distinct ways can these cards be ordered? Show as a factorial.



A	$\frac{6!}{2!}$	B	$\frac{5!}{3!}$
C	$\frac{5!}{2!}$	D	$\frac{5!}{2! \cdot 2!}$
E	$\frac{7!}{4! \cdot 2!}$	F	$\frac{5!}{5! \cdot 0!}$

6

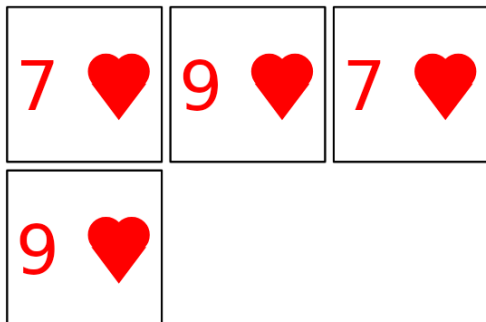
How many distinct ways can these letter tiles be ordered? Show as a multiplication.



A	$\frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 2}$	B	$\frac{4 \cdot 3 \cdot 2}{2 \cdot 3 \cdot 2}$
C	$\frac{4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 2}$	D	$\frac{4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 1}$
E	$\frac{4 \cdot 3 \cdot 2}{2 \cdot 2}$	F	$\frac{3 \cdot 2}{2 \cdot 2}$

7

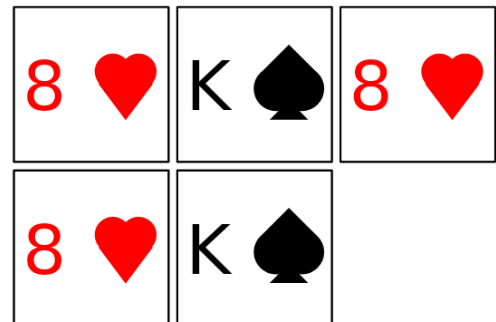
How many distinct ways can these cards be ordered? Show as a factorial.



A	$\frac{4!}{4! \cdot 0!}$	B	$\frac{4!}{2! \cdot 3!}$
C	$\frac{3!}{2! \cdot 2!}$	D	$\frac{5!}{2! \cdot 2!}$
E	$\frac{4!}{2! \cdot 2!}$		

8

How many distinct ways can these cards be ordered? Show as a multiplication.



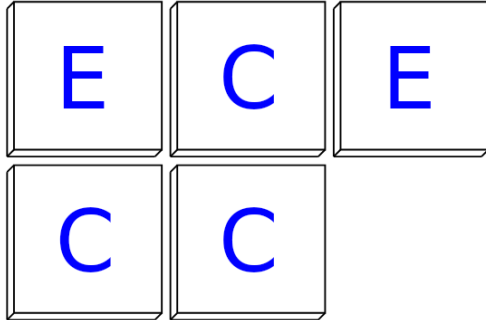
A	$\frac{5 \cdot 4 \cdot 3 \cdot 2}{2 \cdot 3 \cdot 2}$	B	$\frac{5 \cdot 4 \cdot 3 \cdot 2}{4 \cdot 3 \cdot 2 \cdot 3 \cdot 2}$
C	$\frac{5 \cdot 4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 3 \cdot 2}$	D	$\frac{5 \cdot 4 \cdot 3 \cdot 2}{5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$
E	$\frac{5 \cdot 4 \cdot 3 \cdot 2}{2 \cdot 4 \cdot 3 \cdot 2}$		



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9

How many distinct ways can these letter tiles be ordered?
Show as a multiplication.



A
$$\frac{3 \cdot 2}{2 \cdot 3 \cdot 2}$$

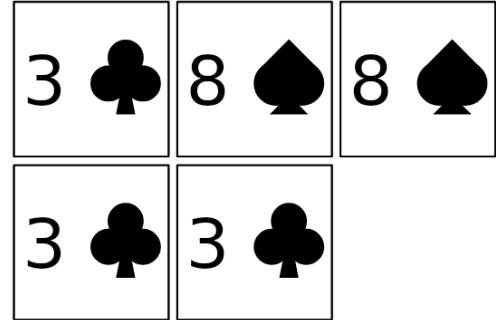
B
$$\frac{5 \cdot 4 \cdot 3 \cdot 2}{5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$$

C
$$\frac{5 \cdot 4 \cdot 3 \cdot 2}{2 \cdot 3 \cdot 2}$$

D
$$\frac{5 \cdot 4 \cdot 3 \cdot 2}{2 \cdot 2 \cdot 3 \cdot 2}$$

10

How many distinct ways can these cards be ordered? Show as a factorial.



A
$$\frac{6!}{3! \cdot 2!}$$

B
$$\frac{5!}{3! \cdot 4!}$$

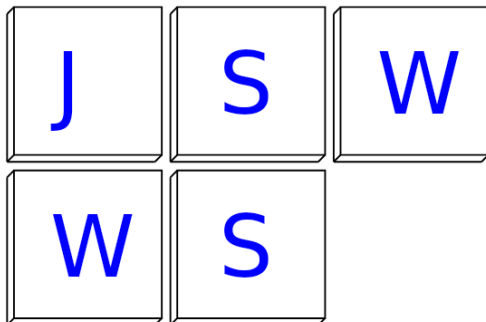
C
$$\frac{7!}{2! \cdot 3! \cdot 2!}$$

D
$$\frac{5!}{3! \cdot 2!}$$

E
$$\frac{5!}{5! \cdot 0!}$$

11

How many distinct ways can these letter tiles be ordered?
Show as a factorial.



A
$$\frac{5!}{4! \cdot 2!}$$

B
$$\frac{6!}{3! \cdot 2! \cdot 2!}$$

C
$$\frac{3!}{2! \cdot 2!}$$

D
$$\frac{5!}{5! \cdot 0!}$$

E
$$\frac{5!}{2! \cdot 2!}$$

12

How many ways can these cards be arranged to still be arranged smallest to largest?



A 240

B 144

C 36

D 48

E 12

13

How many ways can these letter tiles be ordered to spell 'FOOT'?



A 2

B 12

C 4

D 24

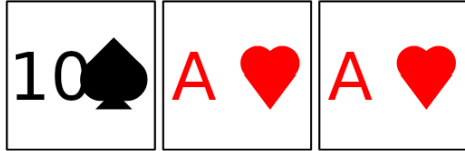
E 6



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14

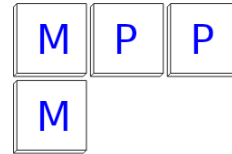
How many distinct ways can these cards be ordered?



A 3	B 11	C 18
D 21	E 0	F 5

15

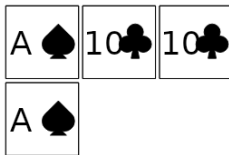
How many distinct ways can these letter tiles be ordered?



A 4	B 2	C 13
D 6	E 15	F 17

16

How many distinct ways can these cards be ordered?



A 3	B 19	C 0
D 21	E 2	F 6

17

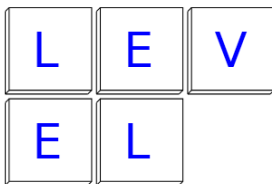
How many distinct ways can these letter tiles be ordered?



A 14	B 10	C 3
D 12	E 5	F 30

18

How many ways can these letter tiles be ordered to spell 'LEVEL'?



A 4	B 48	C 12
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