

The Gilbreath Principle

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Baby Gilbreath Principle

- ▶ Take a pack of playing cards arranged in alternating red black order.
- ▶ Deal down some cards to the table to form a pile.
- ▶ Riffle shuffle the two piles together.
- ▶ Deal the top two cards face up to the table. They will be one red card and one black card. Deal the top two cards to the table again. Once again they will be one red card and one black card. This procedure works for the whole deck!!

The Gilbreath Principle

- ▶ Let P be a pack of N cards labelled $1 \dots N$ and in numerical order.
- ▶ Take an arbitrary number of copies of P piled on top of each other to form a deck.
- ▶ Deal down some cards to the table to form a pile.
- ▶ Riffle shuffle the two piles together.
- ▶ Deal the top N cards face up to the table. They will be cards labelled $1 \dots N$ and in some order. Once again the procedure works for the whole deck!!

Thank you for your time!