The Position Problem: Order Matters!
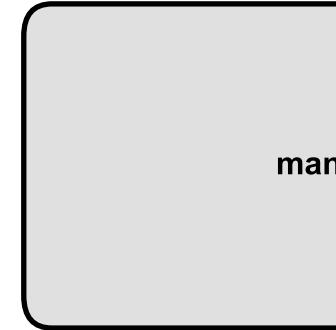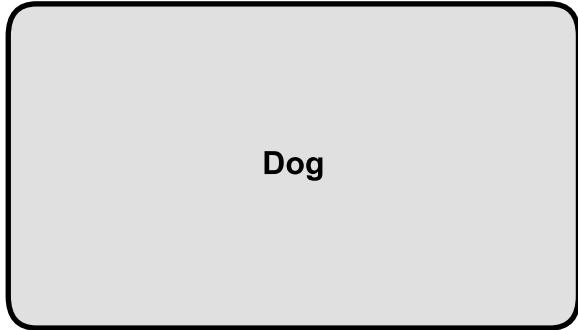
Without Position: Same Attention Pattern!

Self-attention treats these as identical!

Dog	bites	man

With Position: Different Patterns!

Position encoding preserves word order!

Man	bites	dog
Pos 1	Pos 2	Pos 3