

5. Turn Budget

How many turns before the window fills

An AI agent's 4,000-token context window already holds 800 tokens, marked X below. Each turn adds 200 user tokens and 300 output tokens. Mark the turns until the window is full, then count them.

Step 1: Mark the context window, X: already used, U: user, O: output, and () for turn boundaries.

1 - 1,000	X	X	X	X	X	X	X	(	U	U
1,001 - 2,000	O	O	O	X	U	U	O	O	O	X
2,001 - 3,000	O	O	O	X	U	U	O	O	O	X
3,001 - 4,000	O	O	O	X	U	U	O	O	O	)

Step 2: Count the turns

$$(4,000 - 800)/(200 + 300) = 6.4, \text{ so } 6 \text{ turns}$$

Practice 1

An AI agent's 4,000-token context window already holds 1,200 tokens, marked X below. Each turn adds 100 user tokens and 300 output tokens. Mark the turns until the window is full, then count them.

Step 1: Mark the context window, X: already used, U: user, O: output, and () for turn boundaries.

1 - 1,000	X	X	X	X	X	X	X	X	X
1,001 - 2,000	X	X							
2,001 - 3,000									
3,001 - 4,000									

Step 2: Count the turns

5. Turn Budget (continued)

Practice 2

An AI agent's 4,000-token context window already holds 1,000 tokens, marked X below. Each turn adds 300 user tokens and 300 output tokens. Mark the turns until the window is full, then count them.

Step 1: Mark the context window, X: already used, U: user, O: output, and () for turn boundaries.

1 - 1,000	X	X	X	X	X	X	X	X	X
1,001 - 2,000									
2,001 - 3,000									
3,001 - 4,000									

Step 2: Count the turns