# Fitts' Law Problem and Solution

## Problem:

Given the following data:  
- Button A has a width of 20 mm and is 50 mm away.  
- Button B has a width of 40 mm and is also 50 mm away.  
- Constants: a = 50 ms, b = 150 ms.  
  
Using Fitts’ Law, determine which button is faster to access.

## Solution:

Fitts’ Law formula:  
T = a + b × log₂(D / W + 1)

Step 1: Compute time for Button A

T\_A = 50 + 150 × log₂(50 / 20 + 1)

T\_A = 50 + 150 × log₂(3.5)

log₂(3.5) ≈ 1.807

T\_A ≈ 50 + 150 × 1.807 = 50 + 271.05 = 321.05 ms

Step 2: Compute time for Button B

T\_B = 50 + 150 × log₂(50 / 40 + 1)

T\_B = 50 + 150 × log₂(2.25)

log₂(2.25) ≈ 1.17

T\_B ≈ 50 + 150 × 1.17 = 50 + 175.5 = 225.5 ms

Conclusion:

Button B is faster to access (225.5 ms) compared to Button A (321.05 ms) because it is wider, even though the distance is the same.