

Learning Curves

Doubling Method:

$$T_N = T_1 * L^n$$

T_N = The amount of time that it takes to complete unit N

T_1 = The amount of time it takes to complete the first unit. $N=1$

L = Learning Curve found by dividing the most recent time by previous time

n = number of times N is doubled

Formula Method:

$$T_N = T_1 * N^b$$

$$b = \log(\text{learning curve}) / \log(2)$$

N = Number of units

T_N = The amount of time that it takes to complete unit N

T_1 = The amount of time it takes to complete the first unit. $N=1$

Chart Method:

$$T_N = T_1 * C$$

T_N = The amount of time that it takes to complete unit N

T_1 = The amount of time it takes to complete the first unit. $N=1$

C = found in the chart

Notes:

N is the number of units.

n is the number of times N is doubled.

1 → 2 → 4 → 8 → 16 → 32

$n=1$

$n=2$

$n=3$

$n=4$

$n=5$

By 12th repetition =1 hour or less.

Susan Sweeney	
T ₁ =	N=
6 hours	4 th Unit
5 hours	8 th Unit

Julie Berg	
T ₁ =	N=
4 hours	3 rd Unit
3 hours	6 th Unit

<p>Step1: Find the learning curve %. $\underline{5} = .8333$ or 83.3% 6</p>	<p>Step1: Find the learning curve %. $\underline{3} = .75$ or 75% 4</p>
<p>Step 2: Find time for unit 1. $6 = T_1 (.833)^2 \rightarrow T_1 = 8.641$ Or, $5 = T_1 (.833)^3 \rightarrow T_1 = 8.641$</p>	<p>Step 2: Find time for unit 1. $T_N = T_1 C$ Use table to find C: N=6 @75% C= .475 So, $3\text{hrs} = T_1 (.475) \rightarrow T_1 = 6.31$</p>
<p>Step 3: Find Unit 12 $T_N = T_1 * N^b$ $T_{12} = 8.641 (12)^b$ $b = \frac{\log (.833)}{\log (2)}$ $T_{12} = 4.494$</p>	<p>Step 3: Find Unit 12 Use table to find T12: N=12 @75%, C= .357 So, $T_{12} = 6.31(3.57)$ $T_{12} = 2.25267$</p>
<p>**both people did not meet the under 1 hour requirement.</p>	