Calculating Task Time Worksheet

This worksheet is intended to give you practice calculating the task times, using the formulas that we covered in the lesson on Estimating Task Time. Take time to go through these examples. This is an important technique for you to know how to do comfortably. To get the most out of this resource, attempt the questions without looking at the answers. Check your answers to see how close you are to the actual answer. Read through the solutions for the questions you got wrong, then attempt the question again without the answer. For your convenience, here is the example (with solutions) to the example we looked at in the video.

$$Te = \frac{(To + 4Tm + Tp)}{6}$$
$$\sigma = \frac{(Tp - To)}{6}$$
68.5% accuracy → $Te \pm \sigma$
95.5% accuracy → $Te \pm 2\sigma$

We have estimated that our Most Probable Time would be 15 days, our Optimistic Time would be 12 days, and our Pessimistic Time would be 30 days.

$Tm = 15\ days$
$To = 12\ days$
$Tp = 30\ days$

EXPECTED TIME (Te)	**DEVIATION (σ)**
$Te = \frac{(To + 4Tm + Tp)}{6}$	$\sigma = \frac{(Tp - To)}{6}$
$Te = \frac{(12 + 4*15 + 30)}{6}$	$\sigma = \frac{(30 - 12)}{6}$
$Te = \frac{(12 + 60 + 30)}{6}$	$\sigma = \frac{(18)}{6}$
$Te = \frac{(102)}{6}$	$\sigma = 3$
$Te = 17$	

68.5% accuracy → $Te \pm \sigma \rightarrow 17\ days \pm 3\ days \rightarrow 14\ days - 20\ days$
95.5% accuracy → $Te \pm 2\sigma \rightarrow 17\ days \pm 6\ days \rightarrow 11\ days - 23\ days$

This means, that we are 68.5% sure that the project will take between 14 days and 20 days to complete. Or we can say that we are 95.5% sure that the project will take between 11 days and 23 days to complete.

EXAMPLE #1:

$$Te = \frac{(To + 4Tm + Tp)}{6}$$

$$\sigma = \frac{(Tp - To)}{6}$$

68.5% accuracy → $Te \pm \sigma$

95.5% accuracy → $Te \pm 2\sigma$

You have estimated that your Most Probable Time would be 45 days. Your Optimistic Time would be 30 days. Your Pessimistic Time would be 96 days.

$Tm =$ _____

$To =$ _____

$Tp =$ _____

$Te =$ _____

$\sigma =$ _____

68.5% accuracy → _____ ± _____

95.5% accuracy → _____ ± _____

I am 68.5% sure that this project will take between _____ days and _____ days to complete.

I am 95.5% sure that this project will take between _____ days and _____ days to complete.

EXAMPLE #2:

$$Te = \frac{(To + 4Tm + Tp)}{6}$$

$$\sigma = \frac{(Tp - To)}{6}$$

68.5% accuracy → $Te \pm \sigma$

95.5% accuracy → $Te \pm 2\sigma$

You have estimated that your Most Probable Time would be 9 days. Your Optimistic Time would be 6 days. Your Pessimistic Time would be 30 days.

$Tm =$ _____

$To =$ _____

$Tp =$ _____

$Te =$ _____

$\sigma =$ _____

68.5% accuracy → _____ ± _____

95.5% accuracy → _____ ± _____

I am 68.5% sure that this project will take between _____ days and _____ days to complete.

I am 95.5% sure that this project will take between _____ days and _____ days to complete.

EXAMPLE #3:

$$Te = \frac{(To + 4Tm + Tp)}{6}$$

$$\sigma = \frac{(Tp - To)}{6}$$

68.5% accuracy → $Te \pm \sigma$

95.5% accuracy → $Te \pm 2\sigma$

You have estimated that your Most Probable Time would be 60 days. Your Optimistic Time would be 43 days. Your Pessimistic Time would be 75 days.

$Tm =$ _____

$To =$ _____

$Tp =$ _____

$Te =$ _____

$\sigma =$ _____

68.5% accuracy → _____ ± _____

95.5% accuracy → _____ ± _____

I am 68.5% sure that this project will take between _____ days and _____ days to complete.

I am 95.5% sure that this project will take between _____ days and _____ days to complete.

SOLUTION - EXAMPLE #1:

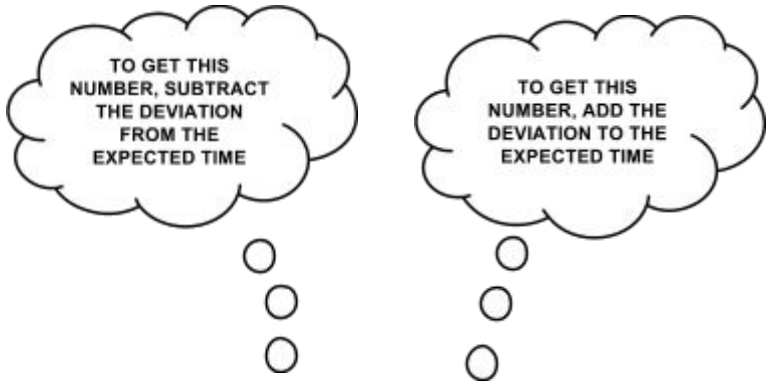
$$Te = \frac{(To + 4Tm + Tp)}{6}$$
$$\sigma = \frac{(Tp - To)}{6}$$
68.5% accuracy → $Te \pm \sigma$
95.5% accuracy → $Te \pm 2\sigma$

You have estimated that your Most Probable Time would be 45 days. Your Optimistic Time would be 30 days. Your Pessimistic Time would be 96 days.

Tm = 45 days
To = 30 days
Tp = 96 days

Te = 51 days
σ = 11 days

68.5% accuracy → 51 ± 11
95.5% accuracy → 51 ± 22



I am 68.5% sure that this project will take between 40 days and 62 days to complete.
I am 95.5% sure that this project will take between 29 days and 73 days to complete.

EXPECTED TIME (Te)	DEVIATION (σ)
$Te = \frac{(To + 4Tm + Tp)}{6}$	$\sigma = \frac{(Tp - To)}{6}$
$Te = \frac{(30 + 4*45 + 96)}{6}$	$\sigma = \frac{(96 - 30)}{6}$
$Te = \frac{(90 + 180 + 96)}{6}$	$\sigma = \frac{(66)}{6}$
$Te = \frac{(306)}{6}$	$\sigma = 11$
$Te = 51$	

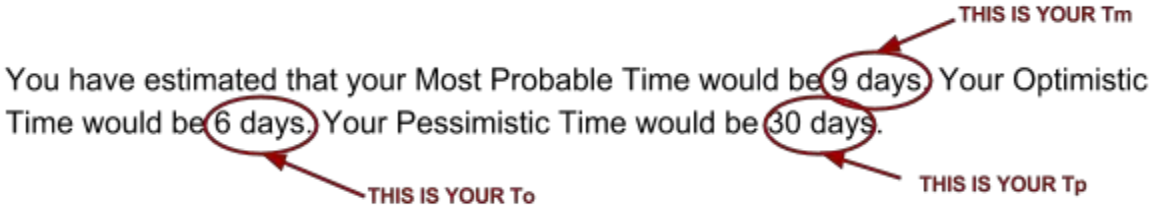
SOLUTION - EXAMPLE #2:

$$Te = \frac{(To + 4Tm + Tp)}{6}$$

$$\sigma = \frac{(Tp - To)}{6}$$

68.5% accuracy → $Te \pm \sigma$

95.5% accuracy → $Te \pm 2\sigma$



Tm = 9 days

To = 6 days

Tp = 30 days

Te = 12 days

σ = 4 days

68.5% accuracy → 12 ± 4

95.5% accuracy → 12 ± 8

I am 68.5% sure that this project will take between 8 days and 16 days to complete.
I am 95.5% sure that this project will take between 4 days and 20 days to complete.

EXPECTED TIME (Te)	**DEVIATION (σ)**
$Te = \frac{(To + 4Tm + Tp)}{6}$	$\sigma = \frac{(Tp - To)}{6}$
$Te = \frac{(6 + 4*9 + 30)}{6}$	$\sigma = \frac{(30 - 6)}{6}$
$Te = \frac{(6 + 36 + 30)}{6}$	$\sigma = \frac{(24)}{6}$
$Te = \frac{(72)}{6}$	$\sigma = 4$

$Te = 12$	

EXAMPLE #3:

$$Te = \frac{(To + 4Tm + Tp)}{6}$$

$$\sigma = \frac{(Tp - To)}{6}$$

68.5% accuracy → $Te \pm \sigma$

95.5% accuracy → $Te \pm 2\sigma$

You have estimated that your Most Probable Time would be 60 days. Your Optimistic Time would be 43 days. Your Pessimistic Time would be 75 days.

$Tm = 60$ days
$To = 43$ days
$Tp = 75$ days

$Te = 60$ days
$\sigma = 6$ days

68.5% accuracy → 60 ± 6
95.5% accuracy → 60 ± 12

I am 68.5% sure that this project will take between 54 days and 66 days to complete.
I am 95.5% sure that this project will take between 48 days and 72 days to complete.

EXPECTED TIME (Te)	**DEVIATION (σ)**
$Te = \frac{(To + 4Tm + Tp)}{6}$	$\sigma = \frac{(Tp - To)}{6}$
$Te = \frac{(43 + 4*60 + 75)}{6}$	$\sigma = \frac{(75 - 43)}{6}$
$Te = \frac{(43 + 240 + 75)}{6}$	$\sigma = \frac{(32)}{6}$
$Te = \frac{(358)}{6}$	$\sigma = 5.33 = 6\ days$

$Te = 59.67 = 60\ days$	