

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 $\rightarrow Te \pm \sigma$

95.5% accuracy $\rightarrow Te \pm 2\sigma$

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.

$Tm = \text{Most Probable Time} = 15 \text{ days}$

$To = \text{Optimistic Time} = 12 \text{ days}$

$Tp = \text{Pessimistic Time} = 30 \text{ days}$

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 $\rightarrow Te \pm \sigma \rightarrow 17 \text{ days} \pm 3 \text{ days} \rightarrow 14 \text{ days} - 20 \text{ days}$

95.5% accuracy $\rightarrow Te \pm 2\sigma \rightarrow 17 \text{ days} \pm 6 \text{ days} \rightarrow 11 \text{ days} - 23 \text{ days}$

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:

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

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

$$68.5\% \text{ accuracy} \rightarrow Te \pm \sigma$$

$$95.5\% \text{ accuracy} \rightarrow Te \pm 2\sigma$$

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 = Most Probable Time = _____

To = Optimistic Time = _____

Tp = Pessimistic Time = _____

Te = Expected Time = _____

σ = Deviation = _____

68.5% accuracy \rightarrow _____ \pm _____

95.5% accuracy \rightarrow _____ \pm _____

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:

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

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

$$68.5\% \text{ accuracy} \rightarrow Te \pm \sigma$$

$$95.5\% \text{ accuracy} \rightarrow Te \pm 2\sigma$$

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.

$$Tm = \underline{\hspace{2cm}}$$

$$To = \underline{\hspace{2cm}}$$

$$Tp = \underline{\hspace{2cm}}$$

$$Te = \underline{\hspace{2cm}}$$

$$\sigma = \underline{\hspace{2cm}}$$

$$68.5\% \text{ accuracy} \rightarrow \underline{\hspace{2cm}} \pm \underline{\hspace{2cm}}$$

$$95.5\% \text{ accuracy} \rightarrow \underline{\hspace{2cm}} \pm \underline{\hspace{2cm}}$$

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:

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

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

$$68.5\% \text{ accuracy} \rightarrow Te \pm \sigma$$

$$95.5\% \text{ accuracy} \rightarrow Te \pm 2\sigma$$

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 \rightarrow _____ \pm _____

95.5% accuracy \rightarrow _____ \pm _____

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 $\rightarrow Te \pm \sigma$

95.5% accuracy $\rightarrow Te \pm 2\sigma$

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

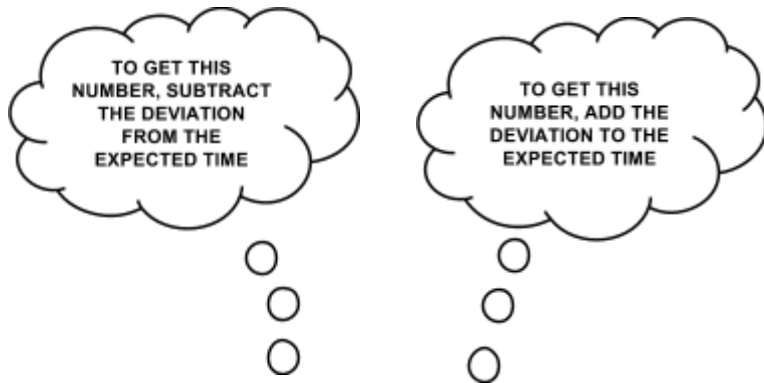
$Tp = 96$ days

$Te = 51$ days

$\sigma = 11$ days

68.5% accuracy $\rightarrow 51 \pm 11$

95.5% accuracy $\rightarrow 51 \pm 22$



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 $\rightarrow Te \pm \sigma$

95.5% accuracy $\rightarrow Te \pm 2\sigma$

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.

THIS IS YOUR Tm

THIS IS YOUR To

THIS IS YOUR Tp

$Tm = 9$ days

$To = 6$ days

$Tp = 30$ days

$Te = 12$ days

$\sigma = 4$ days

68.5% accuracy $\rightarrow 12 \pm 4$

95.5% accuracy $\rightarrow 12 \pm 8$

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 $\rightarrow Te \pm \sigma$

95.5% accuracy $\rightarrow Te \pm 2\sigma$

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 $\rightarrow 60 \pm 6$

95.5% accuracy $\rightarrow 60 \pm 12$

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)
$Te = \frac{(To + 4Tm + Tp)}{6}$	$\sigma = \frac{(Tp - To)}{6}$
$Te = \frac{(43 + 4*60 + 75)}{6}$	$\sigma = \frac{(75 - 43)}{6}$
$Te = \frac{(43 + 240 + 75)}{6}$	$\sigma = \frac{(32)}{6}$
$Te = \frac{(358)}{6}$	$\sigma = 5.33 = 6 \text{ days}$
$Te = 59.67 = 60 \text{ days}$	