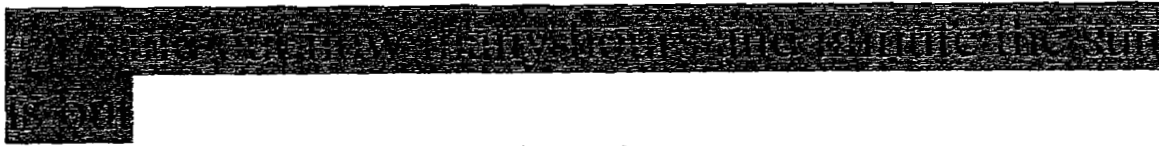


# Steps for finding Local Noon

Sunrise: 8:02 am  
Sunset: 5:27 pm



Step 1: Count up the minutes to get to the next hour

$$8:02 \text{ am} \rightarrow 9:00 \text{ am} = 58 \text{ minutes}$$

Step 2: Count up the hours from sunrise to sunset

$$9:00 \text{ am} \rightarrow 5:00 \text{ pm} = 8 \text{ hours}$$

Step 3: Count up the remaining minutes

$$5:00 \text{ pm} \rightarrow 5:27 \text{ pm} = 27 \text{ minutes}$$

Step 4: Add up the hours and minutes

$$\begin{array}{r}
 8 \text{ hours} \\
 58 \text{ minutes} \\
 + \quad 27 \text{ minutes} \\
 \hline
 8 \text{ hours } 85 \text{ minutes}
 \end{array}$$

Step 5: Change the minutes to hours if greater than 60 minutes

$$85 \text{ minutes} = 1 \text{ hour } 25 \text{ minutes}$$

Step 6: Add up the final hours and minutes

$$\begin{array}{r}
 8 \text{ hours} \\
 + \quad 1 \text{ hour } 25 \text{ minutes} \\
 \hline
 9 \text{ hours } 25 \text{ minutes}
 \end{array}$$

#2 Find the half way point between sunrise and sunset

Step 1: Divide the hours first

$$9 \text{ hours} / 2 = 4 \text{ hours } 30 \text{ minutes}$$

Step 2: Then divide the minutes

$$25 \text{ minutes} / 2 = 12 \text{ minutes } 30 \text{ seconds}$$

Step 3: Add up the hours and minutes

$$\begin{array}{r} 4 \text{ hours } 30 \text{ minutes} \\ + \quad 12 \text{ minutes } 30 \text{ seconds} \\ \hline 4 \text{ hours } 42 \text{ minutes } 30 \text{ seconds} \end{array}$$

#3 Find Local Noon

Step 1: Add the halfway point to sunrise

$$\begin{array}{r} 4 \text{ hours } 42 \text{ minutes } 30 \text{ seconds} \\ + \quad 8 \text{ hours } 2 \text{ minutes} \\ \hline \del{12 \text{ hours } 44 \text{ minutes } 30 \text{ seconds}} = 12:44 \text{ pm } 30 \text{ seconds} \end{array}$$