

$$h(t) = 16 + 16\cos t - 24\sin t$$

To find the extreme value, $h'(t) = -16\sin t - 24\cos t = 0$

$$-2\sin t = 3\cos t$$

$$\tan t = -3/2$$

$$t = 2\pi - \tan^{-1}(3/2) \text{ or } t = \pi - \tan^{-1}(3/2)$$

If you cannot understand the last line, please see

$$\tan(t - \pi) = \tan(t) = -3/2$$

$$t - \pi = \tan^{-1}(-3/2)$$

$$t = \pi + \tan^{-1}(-3/2) = \pi - \tan^{-1}(3/2). \text{ Note } \tan(-\theta) = -\tan(\theta)$$

Similarly

$$\tan(t - 2\pi) = \tan(t) = -3/2$$

$$t = 2\pi - \tan^{-1}(3/2)$$

You may have question about how about

$$\tan(t) = -3/2 \text{ and } t = \tan^{-1}(-3/2) = -\tan^{-1}(3/2)$$

Note $t = 2\pi - \tan^{-1}(3/2)$ and $-\tan^{-1}(3/2)$ are the same point on the circle.