Homework 2

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1 Heading 1

1.1 Heading 2

1.1.1 Heading 3

Question 1: find the first derivative of $y = x^2$.

Proof:

$$\begin{aligned} y = y(x,t) &= Ae^{i\theta} \\ &= A(\cos\theta + i\sin\theta) \\ &= A(\cos(kx-\omega t) + i\sin(kx-\omega t)) \\ &= A\cos(kx-\omega t) + iA\sin(kx-\omega t) \\ &= A\cos\left(\frac{2\pi}{\lambda}x - \frac{2\pi v}{\lambda}t\right) + iA\sin\left(\frac{2\pi}{\lambda}x - \frac{2\pi v}{\lambda}t\right) \\ &= A\cos\frac{2\pi}{\lambda}(x-vt) + iA\sin\frac{2\pi}{\lambda}(x-vt) \end{aligned}$$

Rich in line support: , ω^2 and $\sum_i^n i^2$ whatever. **Bold.** *italic* ~~Strike~~ `code`