Physics 115A First Problem Set

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Office Hours Tu 1:30-3:30pm
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due Monday, January 13, 2003

1. Exercise 1.1.2, p. 3 of your text.

2. Exercise 1.1.5, p. 5 of your text.

3. Imagine 3 abstract vectors, $|V\rangle$, $|W\rangle$, and $|Z\rangle$. The inner products are $\langle W|V\rangle = 2$ and $\langle Z|V\rangle = 5$. Let the (complex) numbers $a = 1+3i$ and $b = 2-4i$. Evaluate, numerically, the inner product of the resultant vector $|aW + bZ\rangle = a|W\rangle + b|Z\rangle$ with $|V\rangle$; this inner product can also be written as $\langle aW + bZ|V\rangle$.

4. Exercise 1.3.2, p. 16 of your text.