PROBLEM SET #1

(1) Compute \((1 + 2i)(3 - 4i)\).
(2) Compute \(\frac{4 + 2i}{1 + i}\).
(3) Find both square roots of \(-4i\).
(4) Compute \(e^{1+\pi i}\).
(5) Use trig identities to compute \(\sin \frac{\pi}{12}\) exactly.
(6) Do Appendix D problems 42, 49, 56, 59.
(7) Do 10.3 problems 3, 6, 9.

BONUS PROBLEM. Explain why the sum of the three cube roots of any complex number is zero.

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