W203, Unit 3 Proof, Q1.2

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$$Corr[aX+b, X] = \frac{Cov[aX+b, X]}{\sqrt{Var[aX+b]} * \sqrt{Var[X]}} = \frac{a * Cov[X, X]}{|a| * \sqrt{Var[X]} * \sqrt{Var[X]}} = \frac{a}{|a|} * Corr[X, X] = \frac{a}{|a|}$$