Quiz A for 9:45 Class: 7/20/12 Name Key

Note: There are no points for solving this problem. All points are for setting up the equations, plugging in the relevant numbers, and stating what you want to solve for.

Given the following returns on Verizon (VZ) and Stanley Black & Decker (SWK) over the past four years (June 1 through June 1 of each year), calculate the covariance between the returns on Verizon and Stanley Black & Decker and the standard deviation of returns on a portfolio consisting of $100,000 invested in Verizon and $400,000 invested in Stanley Black & Decker.

Year	Return on: VZ	SWK
2012	+26%	– 8%
2011	+41%	+46%
2010	– 3%	+53%
2009	– 8%	– 22%

+6 $Stdp = \sqrt{X_{VZ}^2 Var_{VZ} + X_{SWK}^2 Var_{SWK} + 2 X_{VZ} X_{SWK} COV_{VZ,SWK}}$

+2 +2 $X_{VZ} = \frac{100{,}000}{100{,}000 + 400{,}000}$; $X_{SWK} = \frac{400{,}000}{100{,}000 + 400{,}000}$

+3 $Var_{VZ} = \frac{1}{3}((26 - \bar{R}_{VZ})^2 + (41 - \bar{R}_{VZ})^2 + (-3 - \bar{R}_{VZ})^2 + (-8 - \bar{R}_{VZ})^2)$ +6 +2

+3 $\bar{R}_{VZ} = \frac{1}{4}(26 + 41 - 3 - 8)$ +1 +6

+3 $Var_{SWK} = \frac{1}{3}((-8 - \bar{R}_{SWK})^2 + (46 - \bar{R}_{SWK})^2 + (53 - \bar{R}_{SWK})^2 + (-22 - \bar{R}_{SWK})^2)$ +1 +6

+3 $\bar{R}_{SWK} = \frac{1}{4}(-8 + 46 + 53 - 22)$ +1 +6

+6 $COV_{VZ,SWK} = \frac{1}{3}((26 - \bar{R}_{VZ})(-8 - \bar{R}_{SWK}) + (41 - \bar{R}_{VZ})(46 - \bar{R}_{SWK}) + (-3 - \bar{R}_{VZ})(53 - \bar{R}_{SWK}) + (-8 - \bar{R}_{VZ})(-22 - \bar{R}_{SWK}))$ +1 +6