

$$\text{var}\left(\frac{1}{2}X - \frac{1}{3}Y\right) = \text{var}\left(\frac{1}{2}X\right) + \text{var}\left(\frac{1}{3}Y\right) - 2\text{cov}\left(\frac{1}{2}X, \frac{1}{3}Y\right) = 1 + 1 - 0 = 2.$$