

- 1) Firm A has a composite that consists of 15 portfolios. Ten of the portfolios have been in the composite for the entire year. How could Firm A calculate a measure of internal dispersion?

| | Beginning Market Value (\$) | Annual Return (%) |
|-----------------------|-----------------------------|-------------------|
| Portfolio 1 | 100,000 | 5.2% |
| Portfolio 2 | 300,000 | 4.9% |
| Portfolio 3 | 200,000 | 5.5% |
| Portfolio 4 | 500,000 | 5.6% |
| Portfolio 5 | 100,000 | 5.1% |
| Portfolio 6 | 250,000 | 4.7% |
| Portfolio 7 | 450,000 | 5.2% |
| Portfolio 8 | 200,000 | 4.8% |
| Portfolio 9 | 300,000 | 5.3% |
| Portfolio 10 | 200,000 | 5.0% |
| Composite Value | 2,600,000 | |
| Equal-Weighted Return | | 5.1% |

Firm A could disclose the high-low or range of portfolio returns (i.e., high–low = 4.7%–5.6%; range = 0.9%) or could disclose the standard deviation for each period. The standard deviation is calculated as follows:

$$S_R = \sqrt{\frac{(0.052 - 0.051)^2 + (0.049 - 0.051)^2 \dots + (0.050 - 0.051)^2}{10 - 1}}$$

$$= 0.0029 \text{ or } 0.29\%$$