1. **Question:** Buying shares of security *i* improves the Sharpe ratio of a portfolio if its expected return does not exceed the required return. **Answer:** F **Feedback:** The sentence is FALSE. To improve the Sharpe ratio, an asset’s expected return must exceed its required return (the risk premium); otherwise, adding it lowers the portfolio’s risk‑adjusted return.
2. **Question:** The expected variance of a portfolio is the weighted average of the expected variances of the investments within it, using the portfolio weights. **Answer:** F **Feedback:** The sentence is FALSE. Portfolio variance also includes covariance terms between assets; it is not simply the weighted average of individual variances.
3. **Question:** Diversification eliminates independent risks. The volatility of a large portfolio results from the common risk between the stocks in the portfolio. **Answer:** T **Feedback:** The sentence is TRUE. Idiosyncratic (independent) risks offset each other in a large portfolio, so only systematic risk remains in the portfolio’s volatility.
4. **Question:** Short selling extends the set of possible portfolios. **Answer:** T **Feedback:** The sentence is TRUE. Allowing short positions (negative weights) expands the range of achievable risk–return combinations.
5. **Question:** Investors mainly worry about those risks that can be eliminated through diversification. **Answer:** F **Feedback:** The sentence is FALSE. Diversifiable risk can be eliminated without compensation; investors focus on systematic risk, which cannot be diversified away.