3. A financial advisor determines the following information about her clients' portfolios, with regard to their investments in stocks that are of three types: "high-risk / high-return" (*H*), "moderate-risk / moderate-return" (*M*), and "low-risk / low-return" (*L*).

(i) 50% have investments in high-risk stocks
(ii) 90% have investments in moderate-risk stocks
(iii) 55% have investments in low-risk stocks
(iv) 0% have *only* low-risk stocks
(v) 0% have high-risk and low-risk stocks, but no moderate-risk stocks
(vi) Among high-risk investors, 80% also have moderate-risk stocks
(vii) Among high-risk investors, 50% also have low-risk stocks

(a) Express each of the above in terms of a formal probability statement, using events *H*, *M*, and *L*. (5 pts)

(b) Sketch a **Venn diagram** of the three events *H*, *M*, and *L*, with all probabilities clearly labeled. ***Show all work!*** **Values with no calculations shown will receive no credit.** (15 pts)

Investors who have much of their portfolios tied up in high-risk stocks are considered "aggressive" (*A*). After more investigating, she discovers the following information about her clients.

(viii) 16% are aggressive investors
(ix) 100% of aggressive investors have high-risk stocks
(x) 100% of investors who *only* have high-risk stocks are aggressive

Express each of the above in terms of a formal probability statement, and answer the following.

(c) Calculate the percentage of aggressive investors, among high-risk stocks. ***Show all work!*** (3 pts)

(d) Calculate the percentage of *only* high-risk stocks, among aggressive investors. ***Show all work!*** (2 pts)