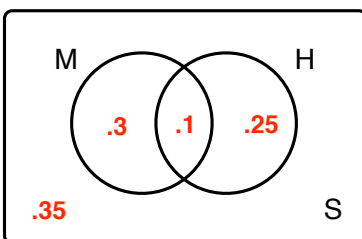


This quiz covers material from 7.3 and 7.4. Show your work. It is acceptable if you set up but do not compute the answers.

1. (2 points) The probability that a student is enrolled in a Mathematics course is 40%. The probability that a student is enrolled in a History course is 35%. The probability that a student is enrolled in both is 10%. Draw a Venn Diagram that accurately depicts this information.

Answer:



2. (2 points) Let E and F be two events that are mutually exclusive. Suppose $P(E) = \frac{1}{3}$ and $P(F) = \frac{1}{6}$. Calculate $P(E \cup F)$.

Answer: Since E and F are mutually exclusive, $P(E \cap F) = 0$. Therefore,

$$P(E \cup F) = P(E) + P(F) - P(E \cap F) = \frac{1}{3} + \frac{1}{6} - 0 = \frac{1}{2}$$

3. (4 points) A jar contains 100 jellybeans. Of those, 20 are licorice flavored and 80 are cherry flavored. Four jellybeans are selected at random without replacement.

a. (2 pts) What is the size of the sample space for this experiment?

Answer:

$$C(100, 4)$$

b. (2 pts) What is the probability two licorice and two cherry jellybeans are chosen?

Answer:

$$\frac{C(20, 2) \cdot C(80, 2)}{C(100, 4)}$$