

Let $A = \{x \mid x \text{ is a car manufactured in America}\}$

$G = \{x \mid x \text{ is a General Motors car}\}$

$H = \{x \mid x \text{ is a Honda car}\}$

$P = \{x \mid x \text{ is a Pontiac car}\}$

1. What is an appropriate Universal set U to encompass these sets?
2. Write the set that represents each described collection:
 - a. The set of Hondas which are manufactured in America
 - b. The set of General Motors cars which are not Pontiacs
 - c. The set of cars which are neither Hondas nor Pontiacs
 - d. The set of cars which are neither Hondas nor Pontiacs but are manufactured in America
3. Express the following statements in English:
 - a. $P \subsetneq G$
 - b. $G \subsetneq A$
 - c. $G \cap H = \emptyset$
 - d. $A \cap H \neq \emptyset$
4. Draw a Venn diagram for the sets defined above, which uses the facts in question 3. Shade in the portion corresponding to $H \cap A^c$.