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Allen wants to add to his existing collection of 300 bottles. Starting today, he will collect 25 bottles each week.

- a. What will be the **total** number of bottles in Allen's collection after 4 weeks? Show or explain how you got your answer.
- b. Write an expression to represent the total number of bottles in Allen's collection after w weeks.
- c. After how many weeks will Allen have a total of exactly 1,000 bottles in his collection? Show or explain how you got your answer.

Allen's goal is to have between 1,500 and 1,600 bottles in his collection.

- d. Write and solve a compound inequality to determine the number of weeks it will take Allen to reach his goal. Show your work.