

Honey Bee Math

Use the following information to answer the questions below: A worker bee weighs 80 milligrams. Her honey crop will hold 70 milligrams of nectar, and her pollen baskets will hold 20 milligrams of pollen. Workers can fly 12 to 15 miles per hour and will average 8 to 12 trips from the hive each day for a distance of $1\frac{1}{2}$ miles foraging for nectar and pollen.

1. If a worker bee flies 15 miles per hour from the colony to a pollen and nectar source $\frac{3}{4}$ miles away, how long does it take her to complete one trip?
2. If a worker bee makes 10 round trips from the colony to the nectar source $\frac{3}{4}$ miles away, how many miles does she travel all together?
3. If a worker bee makes 10 complete trips to get food $\frac{3}{4}$ miles away by flying 15 miles per hour, how much time has she spent flying?
4. If a worker bee can carry 90 milligrams of nectar and pollen each trip, how much total weight has she carried after making 10 trips?
5. Based on your answer for problem 4, how many grams of weight does the worker bee carry all together?
6. How does the total weight carried by the worker bee after making 10 trips compare to her body weight?
7. Of the total weight carried (in milligrams), how much of the weight was from carrying nectar and how much of the weight was from carrying pollen?