

Answer on Question #62504 – Math – Algebra

Question

In 1980, George Adrian set the world record for the most apples picked in 8 hours. He picked a total of 15,830 pounds of apples. That's almost 8 tons of apples! Delilah is practicing so that she can try to beat George's record. After picking for awhile, she finds that she has picked 2 tons of apples. She hopes to pick 2 tons per hour for the next several hours.

If Delilah manages to pick at a rate of 2 tons per hour, how many tons of apples will Delilah have picked 1 hour after she starts picking again?

Solution

Time is the independent variable because it does not depend on the weight of apples Delilah picks. The weight of apples Delilah picks is the dependent variable because it depends on the number of hours Delilah picks.

The time elapsed and the weight of the picked apples are changing. The rate of picking and starting weight are constant.

Starting weight is

$$b = 2 \text{ tons.}$$

The rate of picking is

$$m = 2 \text{ tons/hour.}$$

If $t = 1 \text{ hour}$, then the weight of apples will be

$$w(1) = 2 + 2 \cdot 1 = 4 \text{ (tons)}$$

Answer: Delilah will have picked 4 tons of apples 1 hour after she starts picking again.