



## Problem of the Week

### Problem A and Solution

#### Saving to Surf

#### Problem

Henri is saving money to purchase a new tablet. The tablet he wishes to buy costs \$260.00. Henri started with \$65.00 in his bank account. Last week, he received \$100.00 from his grandmother for his birthday and an additional \$25.00 from his uncle. He deposited his birthday money into his bank account.

- A) After depositing his birthday gifts, how much money does Henri have in his bank account?
- B) Henri earns a weekly allowance of \$8.00. How many weeks will it take Henri to save enough money from his allowance to be able to purchase the tablet?

Show your thinking.

#### Solution

- A) Henri received a total of  $\$100.00 + \$25.00 = \$125.00$  for his birthday. After he deposited his birthday money, Henri had  $\$65.00 + \$125.00 = \$190.00$  in the bank.
- B) We can make a table to determine how much money Henri saves:

Week	Total Savings
1	$\$190.00 + \$8.00 = \$198.00$
2	$\$198.00 + \$8.00 = \$206.00$
3	$\$206.00 + \$8.00 = \$214.00$
4	$\$214.00 + \$8.00 = \$222.00$
5	$\$222.00 + \$8.00 = \$230.00$
6	$\$230.00 + \$8.00 = \$238.00$
7	$\$238.00 + \$8.00 = \$246.00$
8	$\$246.00 + \$8.00 = \$254.00$
9	$\$254.00 + \$8.00 = \$262.00$

After nine weeks, Henri would have saved enough of his allowance in combination with the money in his bank account so that he can buy the tablet.





## Teacher's Notes

This problem can be solved algebraically. We can write an equation that shows the relationship between the time that has passed and the money that has been saved. Let  $w$  represent the number of weeks Henri has been saving money since his birthday. Let  $m$  represent the total amount of money that has been saved. We have calculated that there is \$190.00 in the bank after depositing his birthday gifts. This is the equation that describes the relationship between weeks passed and money saved:

$$m = 8w + 190$$

We know that Henri needs \$260.00 to buy the tablet, so we can substitute 260 in place of  $m$  in the equation.

$$260 = 8w + 190$$

Now we need to find out the value of  $w$ . We subtract 190 from both sides of the equation.

$$\begin{aligned} 260 - 190 &= 8w + 190 - 190 \\ 70 &= 8w \end{aligned}$$

Then we divide both sides by 8.

$$\begin{aligned} \frac{70}{8} &= \frac{8w}{8} \\ 8.75 &= \frac{8w}{8} \\ 8.75 &= w \end{aligned}$$

This means Henri needs more than 8 weeks to save enough money for the tablet. He will have what he needs after 9 weeks of saving.

