Aliza is now making $9 an hour as a babysitter. She used to make $8 last year. By what percent has her hourly rate increased?

If she babysits twice a week for 3 hours at a time, how much more will she make in 8 weeks this year than she did last year?

**MATH STANDARDS ALIGNMENT**
Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

**Personal Finance Big Ideas:**
What is Money

**METHOD 1: I NOTICE, I WONDER™**
After reading the problem, I noticed:
- Aliza now makes $9/hour
- Aliza made $8/hour last year
- Her hourly rate has increased by $1
- She babysits 2 times a week for 3 hours each time
- I want to know how much more she’d make in 8 weeks this year than she did in 8 weeks last year.

I then wondered:
- How many children does Aliza babysit for?
- How old are the children she babysits for?
- Does she ever babysit for more or less than 3 hours at a time?
- How many percent did her hourly rate go up?
- Did she ask for a raise or did she just get one?
- How much does she make a week?
- How much does she make for 2 weeks?

Looking at the problem, I think I want to start with the percent increase in her hourly rate. I know she was making $8 and is not making $9, so the overall increase is $1 per hour. So, I need to figure out what percent of $8 is $1. I can do that by setting up and solving a proportion:

\[
\frac{1}{8} = \frac{?}{100}
\]

\[
100 = 8 \times ?
\]

\[
\frac{100}{8} = ?
\]

\[
12.5 = ?
\]
So I can see that it was a $1 is 12.5% of $8, so the raise was a 12.5% raise.

No I want to figure how much more she’d make in 8 weeks this year than she did last year.

I’ll start by figuring out how much she’d make in 8 weeks last year. I know she works 6 hours a week and would be paid $8/hour. So she’d make 6*8=$48 a week. For 8 weeks, she’d make 48x8 = $384.

Now, year she’d work 6 hours a week and make $9/hour, so she’d make 6*9=$54 per week. For 8 weeks she’d earn 54*8 = $432.

So this year, she’d make more money and we can figure out how much more by using subtraction: $432 - $384 = $48. So she’d make $48 more this year than she did last year.

**METHOD 2: LOGICAL REASONING**

First we wanted to figure out Aliza’s percent increase. Her hourly rate increased by $1, so I need to figure out what $1 represents as a percent of $8. I think I can keep breaking $8 in half to get to $1, and if I keep breaking the percentages in half, I can figure this out:

- I know $4 is half of $8 is 50% of $8.
- I know $2 is half of $4 so $2 is 25% of $8.
- I know $1 is half of $2 so it’s 12.5% of $8.

Now, I want to figure out how much more she made this year than last year. She babysits 3 hours at a time, so for each of those hours she gets $1 more than she did last year, or $3 more every time she babysits. She babysits twice a week, so each week she gets $6 more this year than last year. And we want to know how much more she gets in 8 weeks. So to find that I multiply $6 by 8 weeks and I can see that she makes $48 more this year than last year.