This summer, Owen and Jack will both have part time jobs. Owen will be working as a lifeguard and Jack will be working as a server at a local restaurant. Owen plans to work 15 hours each week and will be making $7 per hour. Jack will make an hourly rate of $2.10 plus 18% of his sales in tips. If Jack averages $30 in sales per hour, how many hours will he need to work in order to make the same amount per week as Owen?

Owen will make $7/hour \times 15 \text{ hours/week} = $105/\text{week}. Jack will make $2.10/\text{hour} + 0.18 \times $30/\text{hour} = $7.50/\text{hour}. In order to make the same amount per week as Owen, Jack will need to work $105/\text{week} \div $7.50/\text{hour} = 14 \text{ hours/week}.

Owen and Jack will both work 15-hour weeks, but Jack’s paychecks will be reduced by 6% for state income tax. What will be the absolute difference in Owen and Jack’s weekly pay?

Owen will be making $105 per week, as calculated in the previous solution. Jack will be making $7.50/\text{hour} \times 15 \text{ hours} = $112.50 but will then pay a 6\% state income tax. Jack will actually take home (1 - 0.06) \times $112.50 = 0.94 \times $112.50 = $105.75 per week. Jack will make $0.75 more per week than Owen.

At the end of the summer, Jack and Owen each will have worked for 12 weeks. They plan to combine their earnings in a joint account to save to buy a used car when they get their licenses. If the account earns 4\% interest annually, what is the total amount Jack and Owen will have in their savings account in two years when they get their licenses?

Jack will earn $105.75 per week, and Owen will earn $105 per week. Collectively, at the end of the summer, they will have earned 12 \times ($105.75 + $105) = 12 \times $210.75 = $2529. After one year, they will have 1.04 \times $2529 = $2630.16 in their account. After two years, they will have 1.04 \times $2630.16 = $2735.37.
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