

Problem-Solving Strategy: Multi-Step Problems

Solving a problem requires several steps such as reading the problem, deciding what to do, and finding the answer. Some steps of solving the problem may need to be broken down into *substeps*, or smaller steps. Identifying the substeps is important in planning how to solve the main problem.

STEPS

1. Read the problem.

In one week Wendy worked 42.5 hours. She earned overtime for each hour over 40. Her overtime rate was 1.5 times her regular rate of \$8.70 per hour. What was her gross pay for the week?

2. Identify substeps.

1. How many hours of overtime pay did Wendy earn?
2. How much was she paid for each hour of overtime?
3. How much was the total overtime pay?
4. How much was the total pay for the 40 regular hours?

3. Solve the problem.

First find the answer for each substep.

1. $42.5 - 40 = 2.5$ hours overtime
2. $1.5 \times \$8.70 = \13.05 per hour of overtime
3. $2.5 \times \$13.05 = \32.625 or $\$32.63$ total overtime pay
4. $40 \times \$8.70 = \348.00 total regular pay

Then solve the main problem.

Regular pay		Overtime pay		Gross pay
\$348.00	+	\$32.63	=	\$380.63

Wendy's gross pay for the week was \$380.63.

Solve. Use substeps.

1. When Randy started his job, he earned \$5.40 an hour. Now he makes \$234 for a 40-hour week. How much more does Randy earn per hour than he did when he started?

Answer _____

2. Evelyn earns a weekly salary of \$560. Wanda earns a monthly salary of \$2,370. Who earns more per year? How much more?

Answer _____

3. Xavier earns a yearly salary of \$16,500. If he gets a raise of \$110 per month, what is the percent of increase?

Answer _____

4. In one week, Quenton earned \$72.90 for overtime hours. He earns time-and-a-half for overtime. If his regular rate is \$8.10 per hour, how many hours of overtime did Quenton work?

Answer _____

Applying Your Skills

Solve.

1. If you received a score of 80% on a test of 20 problems, how many problems did you have correct?

Answer _____

2. Edith bought a \$62 coat at 20% discount. How much did she pay for the coat?

Answer _____

3. Alfredo Gonzales borrowed \$450 at 6% annual interest for 8 months. How much interest did he owe?

Answer _____

4. Sharon repaid a \$500 loan 16 months after it was made. At 6% annual interest, how much interest did she owe?

Answer _____

5. Sol bought 4 shirts on sale at 25% off. They had been marked \$25 each. How much did he save on the 4 shirts? (First, find how much was saved on one shirt. Then, multiply by 4.)

Answer _____

6. By paying cash, Mrs. Brewer received a discount of 5% on the purchase of \$750 in furniture. How much did she save?

Answer _____

7. Mirna bought a suit on sale. The suit had been marked to sell for \$139.00. How much did she save by buying at 40% off?

Answer _____

8. A rancher had 1,500 acres of grazing land for her cattle. This represented 30% of the entire ranch. How many acres are there in the ranch?

Answer _____

9. Jackson bought a table at a discount of 15%. The original price of the table was \$75. How much did he save on the table?

Answer _____

10. At 5% simple interest, Mamie put \$300 in a savings account on the first day of the year. How much would she have in her savings account on the last day of the year?

Answer _____

11. Bonnie got a raise of 32¢ per hour. Now she earns \$314.40 for a 40-hour week. What was her hourly rate before her raise?

Answer _____

12. One week, Christine earned 8% commission on sales of \$4,700. The next week, she earned 9% commission on sales of \$5,500. How much more commission did she earn the second week than the first week?

Answer _____