

2.1

Income

A person can be paid for his or her work in different ways. The four most common was are **salaries**, **commission**, **wages**, and **piece work**.

An **employer** is a person or business who hires a person to perform work or a service under an agreement to pay that person salary or wages. An **employee** is a person who works for another person or company for salary or wages.

Salary

Salary is the amount of money you are paid over a fixed period of time. Salary is usually calculated on a monthly or yearly basis. When working for a salary, you are paid either weekly, every two weeks, semimonthly, or monthly. You receive the same amount of money each pay period. A high school teacher is paid a yearly salary, which they receive in ten equal monthly payments from September to June.

Example 1

How many pay periods are there in a year for each type of pay period?

- a) monthly b) semimonthly c) every two weeks d) weekly

► **Solution:** a) 12

b) $12 \times 2 = 24$

c) $52 \div 2 = 26$

d) 52

Terminology for Workers Receiving Salary or Income

Gross income is a person's salary before any deductions such as federal and provincial income taxes are subtracted.

Net income is the amount of salary a person receives after deductions are subtracted.

Deductions are amounts that are subtracted from a pay cheque.

(federal income tax, provincial income tax, Canada Pension Plan premium, Employment Insurance, union dues)

Income is money that an individual receives in exchange for providing goods or services.

Overtime is time spent working at a job that is in addition to normal working hours.

Calculating Overtime Pay

Consider a regular pay rate of \$20 per hour, and 5 hours of overtime at an hourly rate of time and a half.

Method 1: You are paid $\$20 \times 1.5 = \30 for each overtime hour.

Overtime pay is $\$30 \times 5 = \150

Method 2: You are paid at the regular rate, but each overtime hour counts for 1.5 regular hours.

Therefore 5 overtime hours $\times 1.5 = 7.5$ regular hours

Overtime pay is $\$20 \times 7.5 = \150

Example 2

A worker with an annual salary of \$42 600 is paid every week. Her work week is 40 hours.

- What is her gross pay every week?
- What is her hourly pay rate?
- If overtime hourly rate is one and a half times regular hourly pay rate, what does she make working eight hours overtime during one week?

► **Solution:** a) There are 52 weeks in a year, so gross pay per week is $\frac{42\,600}{52} = \$819.23$ every week

b) She works 40 hours in a regular work week, so her hourly pay is $\frac{819.23}{40} = \$20.48$

c) 8 overtime hours counts as $8 \times 1.5 = 12$ overtime hours.

Overtime pay is $20.48 \times (8 \times 1.5) = \245.76

Total gross pay is regular pay plus overtime pay = $819.23 + 245.76 = \$1064.99$ for working 48 hours in one week.

Example 3

Anna receives a yearly salary of \$48 600 by equal payments every two weeks. Her regular workweek is 37.5 hours, with time and a half for overtime. During a two week period, Anna worked 6 hours overtime.

- What is Anna's hourly rate of pay?
- What is Anna's gross pay for the two week period?

► **Solution:** a) There are $\frac{52}{2} = 26$ pay periods in a year.

Pay every two weeks is $\frac{48\,600}{26} = \$1869.23$

Pay per hour is $\frac{1869.23}{37.5 \times 2} = \24.92

b) Gross pay equals regular pay plus overtime pay = $1869.23 + 24.92 \times (6 \times 1.5) = \2093.51

Example 4

Ryan receives a monthly salary of \$2480, with paydays coming twice per month. Ryan's work week is 35 hours, with time and a half for overtime. During the first half of September, Ryan worked $7\frac{1}{2}$ hours of overtime.

- a) What is Ryan's hourly pay?
- b) How much is Ryan's gross pay for the first half of September?

► Solution:

- a) Ryan's yearly salary is $2480 \times 12 = \$29\,760$

His weekly salary is $29\,760 \div 52 = \$572.31$

His hourly salary is $572.31 \div 35 = \$16.35$ per hour

- b) Gross pay for the first half of September is $2480 \div 2 = \$1240$

Pay for 7.5 hours of overtime is $16.35 \times (7.5 \times 1.5) = \183.94

Total gross pay is $1240 + 183.94 = \$1423.94$ for the first half of September plus 7.5 hours overtime

Example 5

Teachers are contracted on a 10 month period from September to June. A school year consists of 190 teaching days. The average teaching day consisting of preparation, teaching, and marking is 9 hours. Jasmine signs a contract for \$57 000.

- a) What is Jasmine's hourly rate of pay?
- b) If Jasmine's pay is deposited in her bank account over a 12 month period, what is her gross monthly earnings?

► Solution:

- a) Jasmine makes $57\,000 \div 190 = \$300$ per 9 hour day.

Her hourly rate is $300 \div 9 = \$33.33$ per hour.

- b) Gross monthly pay spread over 12 months is $\frac{57\,000}{12} = \$4750$ per month.

Commission

When working for commission, you are paid a certain percent of the total sales that you make. There are three main types of commission.

Straight commission: A percentage of total sales made for a certain period of time.

Graduated commission: Percentage of sales earned increases as sales volume increases for a certain period of time.

Salary plus commission: A minimum salary, plus a commission after a minimum level of sales are reached.

$$\text{Commission pay} = \text{Sales} \times \text{Commission rate}$$

Commission rate is usually expressed as a percentage. For calculations, convert percentage into a decimal.

Example 6 April's commission rate in a furniture store is 8%. She received a commission of \$415 from the sale of a bedroom suite. How much did the bedroom suite cost?

► **Solution:** Commission = Sales \times Commission rate

$$415 = S \times 0.08$$

$$S = \frac{415}{0.08}$$

The cost of the bedroom suite was \$5187.50.

Example 7 Tim works as a salesperson for a motorcycle dealership. He receives a commission of 5.5% on monthly sales up to \$12 000, 7.0% on the next \$10 000, and 8.5% on additional sales during the month. If Tim's December sales were \$32 000, what is his commission for the month?

► **Solution:** Commission on the first \$12 000 is $12\,000 \times 0.055 = \$660$
Commission from \$12 000 to \$22 000 is $10\,000 \times 0.07 = \$700$
Commission from \$22 000 to \$32 000 is $10\,000 \times 0.085 = \$850$

Tim's commission for the month is $660 + 700 + 850 = \$2210$.

Example 8 Lily works in a women's clothing store. She receives a weekly base salary of \$420, plus a commission of 7.5% on all weekly sales over \$5500. If Lily had sales of \$7250 for the week, what is her gross income for that week?

► **Solution:** Base salary is \$420
Commission is on $7250 - 5500 = \$1750$
Commission paid is $1750 \times 0.075 = \$131.25$

Lily's gross pay for the week was $420 + 131.25 = \$551.25$.

Wages

Wages apply to people who work for an hourly rate of pay. Gross pay is simply calculated by multiplying the number of hours worked by the hourly rate of pay, plus any overtime pay. Overtime pay is usually time and a half for any hours above regular work hours per day, or per week. Sometimes overtime pay is double time for situations such as work done on a statutory holiday. Hours of work generally range from 7 to 10 hours per day, or 35 to 40 hours per week. However, many professions such as firefighters, police, or nurses may work 12 hour shifts.

$$\text{Pay} = \text{Hourly rate} \times \text{hours} \quad \text{Gross pay} = \text{Regular pay} + \text{Overtime pay}$$

When calculating overtime pay, each overtime hour counts as 1.5 regular hours.

Example 9 June works as a carpenter for a large construction company. Her regular work week is 40 hours, with an hourly pay of \$20.65 and time and a half for overtime. If June worked 44.5 hours last week, what is her gross pay?

► **Solution:** For 40 hours at \$20.65 per hour, she earns $40 \times 20.65 = \$826.00$
Overtime pay for 4.5 hours is $20.65 \times (4.5 \times 1.5) = \139.39

June's gross pay for the week is $826.00 + 139.39 = \$965.39$

Example 10 Felix is paid \$24 per hour for a 40 hour work week and time and a half for overtime. If Felix's gross pay for the week is \$1176, how many hours of overtime did he work?

► **Solution:** Regular pay for 40 hours at \$24 per hour is $40 \times 24 = \$960$
Overtime earnings is $1176 - 960 = \$216$
Overtime rate is $24 \times 1.5 = \$36$ per hour
Overtime hours are $216 \div 36 = 6$ hours

Felix worked 6 hours overtime.

Example 11 Beatrice works for a local bakery. Her regular workweek is 35 hours with time and a half for overtime. If Beatrice's gross pay for a 35 hour workweek with 5 hours of overtime is \$1041.25, what is her regular hourly pay?

► **Solution:** Hours worked are $35 + (5 \times 1.5) = 42.5$ hours
Pay per hour is $\frac{1041.25}{42.5} = \$24.50$

Beatrice's regular hourly rate is \$24.50

Piece Work

Piece work is any type of employment where the worker is paid a fixed piece rate for each unit produced, regardless of time spent producing the item. Working for piece work does not mean that the employer is exempt from paying minimum wage or overtime in most Canadian provinces. Some industries where piece work is common are agriculture, call centres, trucking, manufacturing, and freelance writing.

Example 12 One of the thirteen product stages in producing parkas is installing the zipper. An experienced seamstress needs 20 minutes on average to sew a zipper to a parka, and is paid \$6.20 per zipper. What is her weekly pay if she has a 35 hour workweek?

► **Solution:** Number of minutes worked per week is $35 \times 60 = 2100$ minutes
 Number of zippers installed per week is $\frac{2100}{20} = 105$ zippers
 Average pay per week is $105 \times 6.20 = \$651$

Example 13 World famous Cowichan sweaters retail at \$250 to \$500. The knitter of the sweater receives 60% of the retail price. The length of time to knit a sweater varies between 20 to 36 hours, depending on the size of the sweater and the design. Sweater A takes 26 hours to knit and sells for \$489. Sweater B takes 22 hours to knit and sells for \$429. How much do the knitters receive for each sweater, and how much did they make per hour?

► **Solution:** Income for sweater A is $489 \times 0.60 = \$293.40$
 Income per hour for sweater A is $293.40 \div 26 = \$11.28$
 Income for sweater B is $429 \times 0.60 = \$257.40$
 Income per hour for sweater B is $257.40 \div 22 = \$11.70$

Example 14 A roofing company specializes in shake cedar roofing. A worker is paid \$32 for one person per square for installation. A square is 100 square feet and takes an average of 1.5 hours to install. What does a team of three roofers each make per hour on a 7000 square foot roof?

► **Solution:** Number of squares is $7000 \div 100 = 70$
 Time for one person to install roof is $70 \times 1.5 = 105$ hours
 Therefore time for three people to install roof is $105 \div 3 = 35$ hours
 The pay to install roof is $70 \times 32 = \$2240$
 Therefore pay for each worker is $2240 \div 3 = \$746.67$
 Pay per hour for each worker is $746.67 \div 35 = \$21.33$