

# 5-3 COMMISSIONS, ROYALTIES, AND PIECEWORK PAY

To do now:

1. Write down the objectives
2. Take out earbuds

You will need:

- Papers on the student table
- Textbook
- Calculator
- Pen or Pencil
- Notebook Paper

Red Items are needed  
during the lecture

## OBJECTIVES

**Compute** pay based on percent commission.

**Compute** pay based on royalties.

**Compute** piecework pay.



## Ways to get paid for completed work rather than hours:

### ➤ Commissions

- You can be either an **employee or an independent contractor** whose pay is based on **sales**
- Example: **Salesman**

### ➤ Royalties

- You are an **independent contractor** who makes money based on **sales** of their work
- Example: **Author**



## ➤ Piecework Pay

- You can be either an **employee** or an **independent contractor** who gets paid for **completed work**
- Example: **Jewelry artist**

Adrianna wrote a textbook for high school students. She receives a 10% royalty based on the total sales of the book. The book sells for \$47.95, and 17,000 copies were sold last year. How much did Adrianna receive in royalty payments for last year?

## COMMISSION & ROYALTY with No Tiers Formulas:

$$\begin{aligned}\text{Total sales} &= \# \text{ of items sold} \times \text{price} \\ &= 17,000 \times 47.95 \\ &= \$815,150\end{aligned}$$

$$\begin{aligned}\text{Royalty} &= \% \text{ royalty} \times \text{total sales} \\ &= .10 \times 815,150 \\ &= \mathbf{\$81,515.00}\end{aligned}$$

## Example 1 – You try it!

Xander writes math textbooks that sell for \$128 each. He receives 8% commission on each book sale. Express the total amount of income Xander earns from selling 2,400 books.

## Example 1 – You try it!

Xander writes math textbooks that sell for \$128 each. He receives 8% commission on each book sale. What is the total amount of income Xander earns from selling 2,400 books.

$$\begin{aligned}\text{Total sales} &= \# \text{ of items sold} \times \text{price} \\ &= 2,400 \times 128 \\ &= \$307,200\end{aligned}$$

$$\begin{aligned}\text{Royalty} &= \% \text{ royalty} \times \text{total sales} \\ &= .08 \times 307,200 \\ &= \mathbf{\$24,576.00}\end{aligned}$$

## Example 2

Allison sells cosmetics part-time from door-to-door. She is paid a monthly commission. She receives 11% of her first \$900 in sales and 17% of the remaining balance of her sales. Last month she sold \$1,250 worth of cosmetics. How much commission did she earn last month?

### COMMISSION & ROYALTY with Tiers Formulas:

$$\begin{aligned} 1^{\text{st}} \text{ tier pay} &= 1^{\text{st}} \text{ tier \%} \times 1^{\text{st}} \text{ tier sales} \\ &= .11 \times 900 \\ &= \$99 \end{aligned}$$

$$\begin{aligned} 2^{\text{nd}} \text{ tier sales} &= \text{total sales} - 1^{\text{st}} \text{ tier level} \\ &= 1,250 - 900 \\ &= 350 \end{aligned}$$

$$\begin{aligned} 2^{\text{nd}} \text{ tier pay} &= 2^{\text{nd}} \text{ tier \%} \times 2^{\text{nd}} \text{ tier sales} \\ &= .17 \times 350 \\ &= \$59.50 \end{aligned}$$

Rate: 17%  
Sales: \$350

Pay:  
\$59.50

Rate: 11%  
Sales: \$900

Pay: \$99

## Example 2

Allison sells cosmetics part-time from door-to-door. She is paid a monthly commission. She receives 11% of her first \$900 in sales and 17% of the balance of her sales. Last month she sold \$1,250 worth of cosmetics. How much commission did she earn last month?

$$\begin{aligned}\text{Total pay} &= 1^{\text{st}} \text{ tier pay} + 2^{\text{nd}} \text{ tier pay} \\ &= 99 + 59.50 \\ &= \mathbf{\$158.50}\end{aligned}$$

Rate: 17%  
Sales: \$350

Pay:  
**\$59.50**

Rate: 11%  
Sales: \$900

Pay: **\$99**

## Example 2 – You try it!

Arthur sells electronics on commission. He receives 7% of his first \$1,500 in sales and 10% of the balance of his sales. Last week he sold \$4,300 worth of electronics. How much commission did he earned last month?

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$$\begin{aligned}1^{\text{st}} \text{ tier pay} &= 1^{\text{st}} \text{ tier \%} \times 1^{\text{st}} \text{ tier sales} \\ &= .07 \times 1,500 \\ &= \$105\end{aligned}$$

$$\begin{aligned}2^{\text{nd}} \text{ tier sales} &= \text{total sales} - 1^{\text{st}} \text{ tier level} \\ &= 4,300 - 1,500 \\ &= 2,800\end{aligned}$$

$$\begin{aligned}2^{\text{nd}} \text{ tier pay} &= 2^{\text{nd}} \text{ tier \%} \times 2^{\text{nd}} \text{ tier sales} \\ &= .10 \times 2,800 \\ &= \$280\end{aligned}$$

Rate: 10% Sales: \$2800
Pay: \$280
Rate: 7% Sales: \$1500
Pay: \$105

## Example 2 – You try it!

Arthur sells electronics on commission. He receives 7% of his first \$1,500 in sales and 10% of the balance of his sales. Last week he sold \$4,300 worth of electronics. How much commission did he earned last month?

$$\begin{aligned}\text{Total pay} &= 1^{\text{st}} \text{ tier pay} + 2^{\text{nd}} \text{ tier pay} \\ &= 105 + 280 \\ &= \mathbf{\$385.00}\end{aligned}$$

Rate: 10%  
Sales: \$2800

Pay:  
**\$280**

Rate: 7%  
Sales: \$1500

Pay: **\$105**

Kate works in a dress factory that makes dresses for designer boutiques. She is paid a piecework rate of \$85 per unit (piece) produced. Yesterday she made 3 dresses. How much did she earn?

**PIECEWORK** with No Tiers Formula:

$$\begin{aligned}\text{Total piecework pay} &= \# \text{ of items completed} \times \text{per unit pay} \\ &= 3 \times 85 \\ &= \mathbf{\$255.00}\end{aligned}$$

## Example 4

Tony picks strawberries and gets paid at a piecework rate of 45 cents per container for the first 200 containers picked. He receives 65 cents per container for every container over 200 that he picks. Last week, Tony picked 270 containers. How much did he earn?

### PIECEWORK with Tiers Formula:

$$\begin{aligned} 1^{\text{st}} \text{ tier pay} &= 1^{\text{st}} \text{ tier unit pay} \times 1^{\text{st}} \text{ tier units completed} \\ &= .45 \times 200 \\ &= \$90 \end{aligned}$$

$$\begin{aligned} 2^{\text{nd}} \text{ tier units} &= \text{total units completed} - 1^{\text{st}} \text{ tier units} \\ &= 270 - 200 \\ &= 70 \end{aligned}$$

$$\begin{aligned} 2^{\text{nd}} \text{ tier pay} &= 2^{\text{nd}} \text{ tier unit pay} \times 2^{\text{nd}} \text{ tier units completed} \\ &= .65 \times 70 \\ &= \$45.50 \end{aligned}$$

Rate: .65  
# Done: 70

Pay:  
\$45.50

Rate: .45  
# Done: 200

Pay:  
\$90

## Example 4

Tony picks strawberries and gets paid at a piecework rate of 45 cents per container for the first 200 containers picked. He receives 65 cents per container for every container over 200 that he picks. Last week, Tony picked 270 containers. How much did he earn?

$$\begin{aligned}\text{Total pay} &= 1^{\text{st}} \text{ tier pay} + 2^{\text{nd}} \text{ tier pay} \\ &= 90 + 45.50 \\ &= \mathbf{\$135.50}\end{aligned}$$

Rate: .65  
# Done: 70

Pay:  
**\$45.50**

Rate: .45  
# Done: 200

Pay: **\$90**

What do I do now?

The 5-3 Assignment

**When is it due?**

**Next Class**