

# Solutions

1. Why do you think a company would choose to pay employees by commission?

To encourage them to work harder.  
The more they sell, the more they earn!

2. a) What other ways are employees paid, other than by commission?  
b) Describe advantages and disadvantages of each method of payment.

a) Salary → fixed amount  
Hourly → how much time  
you spend working

b) Salary → you know you get paid.  
no chance to earn more.  
Hourly → work more hours, get more pay.  
don't get paid if you are sick.

3. Jake earns 25% commission selling ice cream. How much does he earn for each day's sales?

a) Friday \$100    b) Saturday \$180

$$a) 100 \times 0.25 = \$25$$

$$b) 180 \times 0.25 = \$45$$

4. A school earns 35% commission on its book orders. Estimate, then calculate, the commission earned on each month's order.

a) October \$309    b) November \$1850

$$a) \text{ Estimate} = \$100$$

$$\text{ Actual} = 309 \times 0.35 = \$108.15$$

$$b) \text{ Estimate} = \$620$$

$$\text{ Actual} = 1850 \times 0.35 = \$647.50$$

5. To raise funds, members of the drama club sell flower bulbs. They earn 30% commission. Estimate, then calculate how much each person earns for the club.

a)  
b)

Name	Total Bulb Sales
Deanna	\$125.00
Pierre	\$350.00

$$a) \text{ Estimate} = \$36$$

$$\text{ Actual} = 125.00 \times 0.30 = \$37.50$$

$$b) \text{ Estimate} = \$120$$

$$\text{ Actual} = 350.00 \times 0.30 = \$105$$

6. Alana earns a 15% commission on bicycle sales. One week she earned \$450. What were Alana's total bicycle sales for that week?

Have to set up statements (equations) for these

$$\text{Sales} \times \text{Commission percentage} = \text{earnings}$$

$$\frac{y \times 0.15 = 450}{0.15}$$

$$y = \$3000$$

Total bike sales were \$3000

7. Yuri earns a 25% commission on sales of magazine subscriptions. One week he earned \$220. What were Yuri's total sales for that week?

$$\frac{y \times 0.25 = 220}{0.25}$$

$$y = \$880$$

Total sales were \$880

8. Monique earns a 30% commission on jewellery sales. She wants to earn \$600 so she has spending money for her holidays. What amount of jewellery does she need to sell to reach her goal?

$$\frac{y \times 0.30 = 600}{0.30}$$

$$y = \$2000$$

⇒ Needs to sell \$2000 of jewellery.

9. Jules earns a 20% commission on fruit sales. One week, his daily sales were as follows:

Monday \$250

Tuesday \$220

Wednesday \$185

Thursday \$208

Friday \$310

a) What was Jules's commission for the week?

b) Find the answer to part a) using a different method. Does your answer check?

$$\begin{aligned} \text{Total sales} &= 250 + 220 + 185 + 208 + 310 \\ &= \$1173 \end{aligned}$$

$$\begin{aligned} \text{a) Commission} &= 1173 \times 0.20 \\ &= \$234.60 \end{aligned}$$

b) Find commission for each day and find the total.

10. Manuel starts a job selling computer equipment. He earns 15% commission on all sales.

a) Find the total amount of Manuel's commission for the first three weeks.

Week	1	2	3
Sales	\$1250	\$2100	\$2425

b) How much would Manuel need to sell in a week in order to earn \$500?

$$\begin{aligned} \text{a) Total sales} &= 1250 + 2100 + 2425 \\ &= \$5775 \end{aligned}$$

$$\begin{aligned} \text{Commission} &= 5775 \times 0.15 \\ &= \$866.25 \end{aligned}$$

$$\begin{aligned} \text{b) } \frac{y \times 0.15}{0.15} &= \frac{500}{0.15} \\ y &= \$3333.33 \end{aligned}$$

Manuel would need to sell \$3333.33 of computer equipment.

11. There are four headliners and six supporting acts booked for your concert. Each of the headliners is paid a 5% commission on total ticket sales. The supporting acts are each paid 2%. Total ticket sales are \$1 000 000.
- a) How much does each headliner earn?  
 b) How much is paid to each supporting act?  
 c) Find the total amount paid to the bands.  
 d) Each headliner agrees to donate half of its commission to a local charity. How much will the charity receive?

$$\text{a) Commission} = 1,000,000 \times 0.05 = \$50,000$$

$$\text{b) Commission} = 1,000,000 \times 0.02 = \$20,000$$

$$\text{c) Total paid} = 4(50,000) + 6(20,000) = 200,000 + 120,000 = \$320,000$$

$$\text{d) Headliner Commission} = 4 \times 50,000 = \$200,000$$

$$\Rightarrow \$200,000 \div 2 = \$100,000 \text{ donated}$$

12. Jackie sells beauty products on commission. She is paid a 25% commission on make-up items and 30% on bath products. Last month her make-up orders totalled \$420.95 and the bath product orders totalled \$325.00. How much did she earn?

Find commission on each and then add them.

$$\text{Make-up} = 420.95 \times 0.25 = \$105.24$$

$$\text{Bath products} = 325.00 \times 0.30 = \$97.50$$

$$\text{Total commission} = 105.24 + 97.50 = \$202.74$$

13. Donna is paid a 25% commission on catalogue sales. She wants to earn \$1200 to buy a computer. So far she has sales totalling \$3670. How much more does she need to sell to reach her goal?

$$\begin{aligned} \text{Commission} &= 3670 \times 0.25 \\ \text{So far} &= \$917.50 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Needs} &= 1200 - 917.50 \\ &= \$282.50 \text{ more} \end{aligned}$$

$$\begin{aligned} \text{Extra sales needed} \\ \Rightarrow y \times 0.25 &= \frac{282.50}{0.25} \\ y &= \$1130 \end{aligned}$$

Donna needs \$1130 more sales so she can buy a computer.



14. Brian is offered a job that pays \$10/h or 8% commission on sales.

a) One Saturday he works 8 h and sells \$500 worth of merchandise. Which payment option is better for him? Explain why.

$$\begin{aligned} \text{a) Hourly} &= 10 \times 8 \\ &= \$80 \end{aligned}$$

$$\begin{aligned} \text{Commission} &= 500 \times 0.08 \\ &= \$40 \end{aligned}$$

He should take the hourly rate because he earns more

b) Does your answer change if both rates are doubled? Explain.

$$\begin{aligned} \text{b) Hourly} &= 20 \times 8 \\ &= \$160 \end{aligned}$$

$$\begin{aligned} \text{Commission} &= 500 \times 0.16 \\ &= \$80 \\ &\text{Same answer!} \end{aligned}$$

$$\begin{aligned} \text{c) Commission} &= 1000 \times 0.08 \\ &= \$80 \end{aligned}$$

$$\begin{aligned} \text{OR} &= 1000 \times 0.16 \\ &= \$160 \end{aligned}$$

Payment options will be equal.