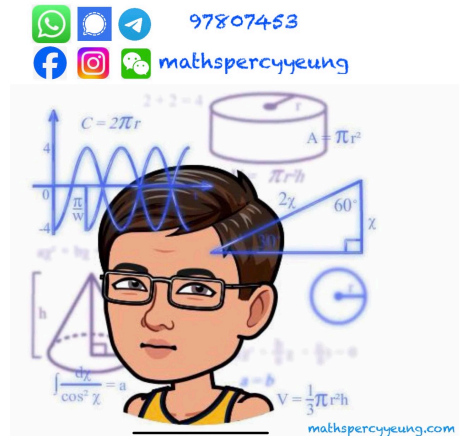


Ch 4 Percentages (II)

(from Quick Practice 4.1)

A shop sold 800 televisions last year. Find the percentage change in sales if the number of televisions sold this year is

- (a) 600,
(b) 848.



(from Quick Practice 4.2)

There were 70 members in the school choir last year. Find the number of choir members this year if the percentage change is

- (a) +20%, (b) -10%.

(from Quick Practice 4.3)

The cost of a project is \$28 000 this year. As compared with last year, the cost has increased by 40%. Find the cost of the project last year.

(from Quick Practice 4.4)

The water bill of Johnny was \$200 in January. His bill was decreased by 20% in February and decreased by 30% in March, but then increased by 50% in April. Find the water bill of Johnny in April.

(from Quick Practice 4.5)

The value of a gold necklace is \$6370 now. The current value is 9% lower than that of last year. Last year, the value was 40% higher than that of two years ago. Find the value of the necklace two years ago.

(from Quick Practice 4.6)

The number of birds in a wetland park decreased by 14% from 2017 to 2018, and then increased by 25% from 2018 to 2019. Find the overall percentage change in the number of birds from 2017 to 2019.

(from Quick Practice 4.7)

A swimming team consists of 40 boys and 36 girls. If the number of boys decreases by 20% and the number of girls increases by 25%, how many members are there in the swimming team now?

(from Quick Practice 4.8)

The ticket price of a show is increased by 25% compared with that of last year. As a result, the number of tickets sold is decreased by 16%. Find the percentage change in the ticket *revenue*.

(from Quick Practice 4.9)

The cost of a shirt consists of production cost and *advertising* cost which are in the ratio 3 : 2. Now, the production cost increases by 10% and the advertising cost increases by 20%.

- (a) Candy claims that the new advertising cost is more than the new production cost. Do you agree? Explain your answer.
- (b) Find the percentage change in the cost of the shirt.

(from Quick Practice 4.10)

The profit of a company is \$3 000 000 this year. If its profit is expected to increase at a constant rate of 2% per year, find the expected profit of the company after 4 years. (Give your answer correct to the nearest \$1000.)

(from Quick Practice 4.11)

In the past 5 months, the number of fans of a Korean singer is increased by 30% per month. If the singer has 400 000 fans now, how many fans were there 5 months ago? (Give your answer correct to 3 significant figures.)

(from Quick Practice 4.12)

Mrs Leung bought a sofa for \$7500 at the beginning of 2018. The value of the sofa depreciated at a constant rate of 15% per year. Find

- (a) the value of the sofa at the beginning of 2020,
 - (b) the depreciation in the value of the sofa from the beginning of 2018 to the beginning of 2020.
- (Give your answers correct to the nearest dollar.)

(from Quick Practice 4.13)

The value of a mobile phone is \$3000 now. Its depreciation rate was 10% per month. Find its value half a year ago. (Give your answer correct to the nearest dollar.)

(from Quick Practice 4.14)

The number of butterflies in a forest decreases at a constant rate of $r\%$ each year. It is known that the number of butterflies was 5700 last year and is 5187 this year.

- (a) Find the value of r .
- (b) Tony claims that the number of butterflies will be less than 3200 after 5 years. Do you agree? Explain your answer.

(from Quick Practice 4.15)

Mr Lee deposits \$12 000 in a bank at an interest rate of 5% p.a. Find the simple interest and the amount if the money is deposited for

- (a) 3 years,
- (b) 30 months.

(from Quick Practice 4.16)

Anthony borrowed a sum of money from a bank at an interest rate of 8% p.a. After 4 years, he repaid the original sum of money together with a simple interest of \$1600 to the bank. Find the principal that Anthony borrowed.

(from Quick Practice 4.17)

Flora deposited \$20 000 in a bank at a simple interest rate of 5.5% p.a. After a certain period of time, she received an amount of \$24 400 from the bank.

- (a) Find the simple interest received by Flora.
- (b) For how long was the money deposited?

(from Quick Practice 4.18)

Joyce deposited \$45 000 in a bank at a simple interest rate. After 9 months, she received an amount of \$51 075. What was the annual interest rate?

(from Quick Practice 4.19)

Cathy deposits \$30 000 in a bank at an interest rate of 8% p.a. compounded yearly. Find the amount and the compound interest received after 2 years.

(from Quick Practice 4.20)

Judy borrowed a sum of money from a bank at an interest rate of 15% p.a. compounded yearly. She repaid the original sum of money together with an interest of \$62 505 after 3 years. Find the principal which Judy borrowed.

(from Quick Practice 4.21)

Timmy deposited \$20 000 in a bank at an interest rate of 8% p.a. for 3 years. Find the compound interest if the interest is compounded quarterly. (Give your answer correct to the nearest dollar.)

(from Quick Practice 4.22)

Michael borrowed a sum of money from a bank at 10% p.a. and the interest was compounded half-yearly. If he needs to repay an amount of \$6615 after one year, how much did he borrow from the bank?

(from Quick Practice 4.23)

Mrs Wong wants to borrow \$18 000 from a financial company. She will repay the money borrowed and the interest after 2 years. She is considering the following two companies.

Financial company A

Interest rate of 20% p.a.
by simple interest

Financial company B

Interest rate of 18% p.a.
compounded monthly

Which financial company should Mrs Wong choose to pay less interest? Explain your answer.

(from Quick Practice 4.24)

Jenny's annual income is \$350 000 in the financial year 2019/20 and her allowance is \$160 000. How much salaries tax should she pay?