Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time. Our Staff will be continuously, sending notes and exercises on a weekly basis through what's app and email. Students are requested to copy the notes and do the exercises on their copybooks. The answers to the questions below will be made available on our website on knowledgeplus.mu/support.php. Please note that these are extra work and notes that we are providing our students and all classes will be replaced during the winter vacation. We thank you for your trust and are convinced that, together, we will overcome these troubled times.

Knowledgeplus Training Center

Mathematics

Garde 8

Week 5

Notes and Exercise

Note:(All the Notes, Examples and Exercise are on the photos and Note:(Please copy all the Notes, Examples and Exercises on your copy book).

Mathematics Grade 8 Week 5

Personal and Household finance.

Value Added Tax (VAT)

A Value Added Tax (VAT) is a tax charged by the government on goods and services. The rate of VAT in Mauritius is 15%.

Example 1

The original price of an article is Rs 5000. Given that the VAT rate is 15%, find:

(a) the amount paid as VAT

(b) the amount paid for the article inclusive of VAT.

Solution

Price before vat = Rs 5000

VAT = 15% of the original price

(a) Amount of VAT $= \frac{15}{100} \times$ Rs 5000 = Rs 750

(b) Amount paid for article inclusive of VAT

= Rs 5000 + Rs 750

= Rs 5750

Example 2
The price of a kettle is Rs 980 and the tax rate is 15%. Find the total price paid for the kettle inclusive of VAT

Solution
Method 1
Price before VAT = Rs 980
VAT = 15% of the original price

Amount of VAT = $\frac{15}{100} \times$ Rs 980
= Rs 147

Price of kettle inclusive of VAT = Rs 980 + Rs 147
= Rs 1127

Method
Price before ~~Vat~~ VAT = 100% (In term of percentage)
Percentage of VAT = 15% (In term of percentage)
Price after VAT = 100% + 15% (In term of percentage)
= 115%

∴ Price after VAT in rupees = $\frac{115}{100}$% $\times$ Rs 980
= Rs 1127

Example 3

The price of a Microwave, inclusive of VAT is Rs 2645 and the tax rate is 15%. find the price of the microwave without VAT.

Solution

Price of microwave including VAT = Rs 2645

VAT = 15%

Hence

115% → Rs 2645

1% → Rs $\frac{2645}{115}$

100% → Rs $\frac{2645}{115} \times 100$ = Rs 2300

The price of the microvawe without VAT = Rs 2300.

Note: To find the price of an article inclusive of VAT (VAT at 15%) = $\frac{115}{100}$ × Price without VAT

To find price of an article without VAT (VAT of 15%) = $\frac{100}{115}$ × price after VAT

Attempt Question 1 to 6.

In questions 1 to 6 below, the VAT is taken at 15%.

1. Roshan's restaurant bill is Rs 9 800 without VAT.
   (a) Find the VAT.
   (b) Find the total bill.

2. A refrigerator costs Rs 17 400 without VAT. Find the VAT paid on the refrigerator.

3. A shirt costs Rs 150 without the VAT. Find the price inclusive of VAT.

4. A dress costs Rs 1 600 without VAT. Find the price inclusive of VAT.

5. A suitcase costs Rs 2 300 inclusive of VAT. Find:
   (a) the amount of VAT.
   (b) the price of the suitcase without VAT.

6. The price of a car tyre inclusive of VAT is Rs 2 415. Find the price of the car tyre without VAT.

Percentage increase

Example

The price of a book is Rs 80. It increase by 10%. What is the new price?

Solution

Method1

Point to remember

In increase we add

Original price = Rs 80

Percentage increase = 10%.

Value of the increase = $\frac{10}{100} \times$ Rs 80 = Rs 8

∴ New price = (Rs 80 + Rs 8) = Rs 88

Method2

Original price = 100% (In percentage)

Percentage increase = 10%

New value, in percentage = 100% + 10%
= 110%

New price = $\frac{110}{100} \times$ Rs 80 = Rs 88

When an article is increase by x%. You add x% with the 100%. (x% is any Number)

When doing the exercise you can do method1 or method2

Example

Decrease 60 kg by 20%

Solution

Method1

Original value = 60 kg

Percentage decrease = 20 %.

Point to remember

In ~~der~~decrease we Substract

Value of the decrease = $\frac{20}{100} \times 60$ kg

= 12 kg

New value = (60-12) = 48 kg

Method 2

Original value = 100 %

Percentage decrease = 20 %

New value, in percentage = 100% - 20%.

= 80%.

New value, in kg = $\frac{80}{100} \times 60$ kg = 48 kg

when doing the exercise you can method 1 or method 2

Attempt Question 1 to 5.

1. Increase:
   (a) 60 by 10 % (b) Rs 250 by 5% (c) 180 km by 50% (d) 9 000 m by 0.5%

2. Decrease:
   (a) 40 g by 5% (b) 300 mL by 20% (c) Rs 2 500 by 13% (d) 3 600 kg by 1.5%

3. Pravesh was asked to decrease 60 by 10%. He obtained 66 as answer. Is the answer correct? Justify your answer.

4. There is a special offer on a certain brand of washing machine powder where 1.2 kg of powder was offered for the price of 1 kg. Work out the percentage extra that is free.

5. In a sale, the price of a sofa set decreases by 30%. If the original price of the sofa set was Rs 32 500, find the sale price.

Example

(a) The price of a bottle of water increase from Rs 20 to Rs 22. What is the percentage increase in its price?

(b) The price of a ~~desert~~ dessert decrease from Rs 50 to Rs 40. What is the percentage decrease in its price

Original price

Original price

Solution

(a) Increase in price is: Rs 22 − Rs 20 = 2

Rs 20 → 100% (Original price)

Rs 1 → $\frac{1}{20} \times 100$

Rs 2 → $\frac{2}{20} \times 100 = 10\%$

(b) Decrease in price = Rs 50 − Rs 40 = Rs 10

Rs 50 → 100% (Original price)

~~Rs 1 → $\frac{1}{50} \times 100$ /~~

Rs 1 → $\frac{1}{50} \times 100$

Rs 10 → $\frac{10}{50} \times 100$

Note:
Percentage increase = Increase

Note:
Percentage Increase = $\frac{\text{Increase}}{\text{Original price}} \times 100\%$

Percentage Decrease = $\frac{\text{Decrease}}{\text{original price}} \times 100\%$

Attempt Question 1 to 4.

1. A shopkeeper increased the price of an article from Rs 120 to Rs 200. Find the percentage increase in the price of the article.

2. In a sale, the price of a book decreases from Rs 400 to Rs 250. Find the percentage decrease in the price of the book.

3. The price of an article decreases from Rs 280 to Rs 112. Find the percentage decrease.

4. Pascale's salary increases from Rs 45 000 to Rs 48 000. Find the percentage increase in her salary.