# District Public School \& College,Depalpur 

E-Learning Project<br>Summer Task

Tutorial Links,

Home Assignments, Work Sheets
and Activities

Academic Session 2020-2021


Class : $7^{\text {th }}$
Student Name : $\qquad$
Father Name: $\qquad$

## Exercise \# 5.2

- Web link https://youtu.be/4T_UIT5zITE

Example 1: Write the square root of 900.

## Solution:

- Find the prime factors of 900 .

Factorization of $900=2 \times 2 \times 3 \times 3 \times 5 \times 5$

- Take square root on both sides.

$$
\sqrt{900}=\sqrt{2 \times 2 \times 3 \times 3 \times 5 \times 5}
$$

Write them as a pair of prime factors of a perfect square.

$$
\begin{gathered}
\sqrt{900}=\sqrt{2 \times 2} \times \sqrt{3 \times 3} \times \sqrt{5 \times 5} \\
\sqrt{900}=\sqrt{2^{2}} \times \sqrt{3^{2}} \times \sqrt{5^{2}}
\end{gathered}
$$

$\sqrt{900}=2 \times 3 \times 5$
$\sqrt{900}=30$
Hence, 30 is the square root of 900 .

1. Find the square roots of the following numbers.
(i) 4
(iii) 36
(vii) 49

## Learn and Write Table of 9



## Exercise \# 5.2

- Web link https://youtu.be/Jp_CqwEOwo0

Example 1: Write the square root of 900.

## Solution:

- Find the prime factors of 900 .

Factorization of $900=2 \times 2 \times 3 \times 3 \times 5 \times 5$

- Take square root on both sides.

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Write them as a pair of prime factors of a perfect square.

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\begin{gathered}
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\sqrt{900}=\sqrt{2^{2}} \times \sqrt{3^{2}} \times \sqrt{5^{2}}
\end{gathered}
$$

$\sqrt{900}=2 \times 3 \times 5$
$\sqrt{900}=30$
Hence, 30 is the square root of 900 .
2. Find the square roots of the following numbers by primefactorization.
(i) 144
(vi)729

Learn and Write Table of 10


## Exercise \# 5.2

- Web link https://youtu.be/CINLySsacfM

Example 3: Find the square root of the compound fraction $1 \frac{63}{81}$ Solution:
(i) Change the mixed fraction into an improper fraction as:

$$
1 \frac{63}{81}=\frac{144}{81}
$$

Now find the square root. Thus,

| 3 | 81 |
| :---: | :---: |
| 3 | 27 |
| 3 | 9 |
|  | 3 |


| 2 | 144 |
| :---: | :---: |
| 2 | 72 |
| 2 | 36 |
| 2 | 18 |
| 3 | 9 |
|  | 3 |

$$
\begin{aligned}
\frac{\sqrt{144}}{\sqrt{81}}=\frac{\sqrt{2 \times 2 \times 2 \times 2 \times 3 \times 3}}{\sqrt{3 \times 3 \times 3 \times 3}} & =\frac{\sqrt{2 \times 2} \times \sqrt{2 \times 2} \times \sqrt{3 \times 3}}{\sqrt{3 \times 3} \times \sqrt{3 \times 3}} \\
& =\frac{\sqrt{2^{2}} \times \sqrt{2^{2}} \times \sqrt{3^{2}}}{\sqrt{3^{2}} \times \sqrt{3^{2}}}=\frac{2 \times 2 \times 3}{3 \times 3}=\frac{12}{9}=1 \frac{3}{9}
\end{aligned}
$$

Thus, $1 \frac{3}{9}$ is the square root of $1 \frac{63}{81}$
3.Find the square roots of the followingfractions.
(i) $\frac{49}{81}$
(vi) $1 \frac{13}{36}$

Learn and Write Table of 11


## Exercise \# 5.2

- Web link https://youtu.be/w0-nut5Ru9Q

Example. Prove by prime factorization.
$\sqrt{9 \times 36}=\sqrt{9} \times \sqrt{36}$

## Solution:

$\sqrt{9 \times 36}=\sqrt{9} \times \sqrt{36}$

## L.H.S

$=\sqrt{9 \times 36}$
$=\sqrt{324}$
$=\sqrt{18 \times 18}$
$=\sqrt{18^{2}}$
$=18$
Hence proved L.H.S = R.H.S
4. Prove each of the following by prime factorization.
(ii) $\sqrt{144 \times 4}=\sqrt{144} \times \sqrt{4}$

## Learn and Write Table of 12



## Unit 5

## Review Exercise

## 1.Tick ( $\checkmark$ ) the correct answer.

i- Which of the following is not a perfect square?
(a) $\sqrt{16+9}$ (b) $\sqrt{25+9}$
(c) $\sqrt{16 \div 9}$
(d) $\sqrt{24-9}$
ii- If the perimeter of a square shaped garden is 40 m then its area is:
(a) $160 \mathrm{~m}^{2}$ (b) $400 \mathrm{~m}^{2}$
(c) $100 \mathrm{~m}^{2}$
(d) $1600 \mathrm{~m}^{2}$
iii- $\sqrt{2_{4}^{1}}=$ $\qquad$
(a) 0.15
(b) 1.5
(c) 10.5
(d) 0.015
2. Fill in the blanks.
(i) $4,9,16,25, \ldots$ are called $\qquad$ .
(ii) If If $x=y^{2}$, then $y$ is called the $\qquad$ of $x$.
(iii) While finding the square root by division method, the
digits are paired from $\qquad$ .
(iv) The number whose square root is non-terminiting and
non-recurring decimal is called the $\qquad$ number.
(v) $\sqrt{\frac{121}{144}}=\frac{\sqrt{ } 121}{\sqrt{ }}$
(vi) $\frac{\sqrt{ }}{\sqrt{ }}=\sqrt{\frac{169}{100}}$

## Test

1. Find the square roots of the following numbers.
i. 100
2. Find the square roots of the following numbers by prime factorization.
i. 441

## Unit 5

## Name:

$\qquad$ Date: $\qquad$
Square Roots Worksheet
Solve.

| 1a. $\sqrt{49} \times \sqrt{49}$ | 1b. $(\sqrt{16})^{2}$ |
| :--- | :--- |
| 2a. $\sqrt{2 \times 8}$ | 2b. $\sqrt{36}-\sqrt{81}$ |
| 3a. $\sqrt{91-27}$ | 3b. $\sqrt{\frac{490}{10}}$ |
| 4a. $\sqrt{24^{2}}$ | 4b. $\sqrt{49}+\sqrt{100}$ |
| 5a. $\sqrt{49+0}$ | 5b. $\sqrt{9} \times \sqrt{49}$ |
| 6a. $\frac{\sqrt{100}}{\sqrt{4}}$ | 6b. $\quad(\sqrt{100})^{2}$ |

## Exercise \# 7.1

- Web link https://youtu.be/FU2Cc9sz6A4
- Introduction to Taxes


### 7.1 Taxes

Government needs money to run a state. For this purpose, government collects an amount from the public and provides them facilities like security, hospitals, education, defense, roads, parks, etc. This amount is called a tax. We pay different types of taxes in Pakistan but here we shall, discuss only property and general sales tax.

### 7.1.1 Property Tax and General Sales Tax

## - Property Tax

The tax which is received on a property is called the property tax. Property tax is a provincial tax paid on the value of a property. It is generally paid at a flat rate of $2 \%$ but the tax rates vary, depending on the province.

## - General Sales Tax

"The tax a buyer pays to the seller at the time of buying things is called general sales tax". General sales tax is imposed by the government on the percentage of the selling prices of things. In Pakistan, its rate varies from $0 \%$ to $25 \%$ depending on exemptions and types of industry.
In Pakistan some basic items including wheat, rice, pulses, vegetables, meat, poultry, books, drugs, etc. are exempted from the general sales tax.

## Learn and Write Table of 13



## Exercise \# 7.1

- Web link https://youtu.be/TZXVf7ObeZI

Example : Find the property tax on a property of Rs.6,200,000 at the rate of $0.8 \%$. Solution:
Worth of the property = Rs.6,200,000
Tax rate $=0.8 \%$
Property tax = ?
Property tax $=0.8 \%$ of Rs.6,200,000
$=8 / 100 \times 6,200,000$
= Rs.49,600
2. Find the property tax on a property of worth Rs.948,000 at therate of $1.5 \%$.
6.Find the property tax on a property of Rs.650,000 at the rate of $1.8 \%$

## Learn and Write Table of 14



## Exercise \# 7.1

- Web link https://youtu.be/jutHTYh-umk

Example 4: $\quad$ The price of a mobile is Rs. 8,800 inclusive of a $10 \%$ GST. What is the original price of the mobile?

## Solution:

Price of the mobile $=$ Rs. 8,800
GST rate $=10 \%$
Original price $=$ ?
Price \% of the mobile $=100 \%+10 \%=110 \%$
By using the unitary method
$110 \%$ price of the mobile $=$ Rs. 8,800
$1 \%$ price of the mobile $=$ Rs. $\left(\frac{8,800}{110}\right)$
$100 \%$ price of the mobile $=$ Rs. $\left(\frac{8,800}{110} \times 100\right)=$ Rs. 8,000
Thus, the original price of the mobile is Rs.8,000.
8.The price of a bicycle is Rs. 6,480 inclusive $\mathbf{8 \%}$ GST. What is the original price of the bicycle?

Learn and Write Table of 15


1. Calculate the amount of property tax of a house at the rate of $\mathbf{2 \%}$. The value of the house is Rs. 1,450,000.
2. The price of a toy is Rs.500. Find the sale price of the toy if GST is $\mathbf{1 6 \%}$.

## Exercise \# 7.2

- Web link https://youtu.be/-OGdOk3xsm8
- Introduction to Profit and Markup


### 7.2 Profit and Markup

We know that in a business, generally goods are bought at a certain price and sold at a higher price. In such a case, there is a gain, i.e.
Sale price - Cost price = Gain

While discussing this gain, we often use two different terms, profit and markup. To understand the difference between these two terms, let us learn them one by one.

## - Profit

A profit means what we have earned after selling a thing. It is calculated as a percentage of the cost price as shown below.

$$
\text { Profit } \%=\frac{\text { Gain }}{\text { Cost price }} \times 100 \%
$$

## - Markup

In our daily life, we often borrow money from our friends and relatives to buy a thing that we repay them after a certain period. Some banks and retail organizations also provide the same services and charge an additional amount called markup.
"A markup is an amount added to a cost price to calculate the sale price."
Usually, we calculate the markup as a percentage of the actual amount paid for a thing. This is called the markup rate and paid amount itself is called the principal. Suppose " P " is the principal, " T " is the time period and " R " is the markup rate, then the amount of markup will be:

$$
\text { Markup }=\frac{\text { RPT }}{100}
$$

Learn and Write Table of 16


## Exercise \# 7.2

- Web link https://youtu.be/jEGiTfabqJ0

Example : Imran sold a bicycle for Rs. 3,978 and got 17\% profit.Find the cost price of the bicycle.
Solution:
Sale price (S.P) = Rs.3,978
\% Profit = 17\%
By using formula,

$$
\begin{aligned}
& \text { Cost price }(C . P)=\frac{\text { Sale price }}{(100 \%+\text { Profit\% })} \times 100 \\
& \text { Cost price }(C . P)=\left(\frac{3978}{100+17} \times 100\right) \\
& \text { price }(C . P)=\left(\frac{3978}{117} \times 100\right)=\text { Rs. } 3,400
\end{aligned}
$$

3. If $16 \%$ profit on a mobile set is Rs.832. Find the cost price of the mobile set.

Learn and Write Table of 17


## Exercise \# 7.2

## - Web link https://youtu.be/QFK-zlyckIY

Example : Aleem bought a television for Rs. 15,000 oninstallments at the markup rate of $12 \%$ per annum. Find the sellingprice of the television if time period is 3 years. Solution:
Cost price $(P)=$ Rs. 15,000 ; Markup rate $=12 \%$ per annum
Time period $(T)=3$ years ; Price of the Television $=$ ?
Using the formula,
Amount of the markup $=$ RPT $/ 100=12 \times 15000 \times 3 / 100$

$$
\text { = Rs. } 5400
$$

Price of the television = cost price + markup

$$
=\text { Rs. 15,000 + Rs. 5,400 }
$$

= Rs. 20,400
8. Khushi bought a computer for Rs. 100,000 and paid a markupof Rs. 25,000 for 2 years. What markup rate did she pay?

## Learn and Write Table of 18



## Exercise \# 7.2

- Web link https://youtu.be/uBD05GMWnps

Example : Hatim bought a bike for Rs. 135,000 and sold at 62\% profit. Find the sale price of the bike.
Solution:
Method I
\% profit = 62\%
Cost price = Rs.135,000
Sale price $=$ ?
Sale price $=(100 \%+62 \%) \times 135,000$ rupees
$=162 \% \times 135,000$ rupees
$=\left(\frac{162}{100} \times 135,000\right)$
=Rs. 218,700
4. Zia bought an out of order clock for Rs. 750 and got it repaired for Rs.425. What should be the selling price of the clock if Zia wants to earn $\mathbf{2 5 \%}$ profit?

## Learn and Write Table of 19



1. Hatim bought a bike for Rs. 135,000 and sold at $62 \%$ profit. Find the sale price of the bike.
2. Find the markup on a principal amount of Rs. 75,500 at the rate of $9 \%$ per annum for 4 years.

## Exercise \# 7.3

- Web link https://youtu.be/SMmyWOgmBt8
- Introduction to Zakat and Ushr


### 7.3 Zakat and Usher

Zakat and Ushr are levied as ordered in the Holy Qur'an and Sunnah. Let us discuss them one by one.

## - Zakat

Zakat is one of the five pillars of Islam which is ordrs by Almighty Allah which is paid on the wealth which remains with a person for a complete year. Islam has fixed its rate, that is $2.5 \%$.

Nisab (minimum limit of wealth that attracts liability of Zakat) in case of gold is 7.5 tolas and in case of silver is 52.5 tolas.

## - Ushr

Ushr means one-tenth. It is paid on agricultural products. It is paid at the rate of $10 \%$ of the produce in case a piece of land irrigated by natural sources like rain, springs, streams, etc. However, the rate of Ushr is one-half, i.e. $5 \%$ of the entire produce in case
a piece of land watered by artificial means of irrigation such as wells, buckets, tube well, etc.

Nisab (minimum amount of agricultural produce) which is liable to Ushr is 948 kg in weight. If the produce is less than that, no Ushr is chargeable.

Learn and Write Table of 20


## Exercise \# 7.3

- Web link https://youtu.be/LloKUAqSkik

Example : Calculate the amount payable as Zakat by Haleemwho saves Rs.949,000 for one year.
Solution:
Total Saving = Rs.949,000
Rate of Zakat = 2.5\%
Amount of Zakat = ?
Amount of Zakat $=2.5 \%$ of Rs.949,000
$=2.5 / 100 \times 949000$
$=$ Rs. 23,725
Thus, Haleem will pay Rs.23,725 as Zakat.

1. An amount of Rs. 62,480 remained with Nosheen for a complete year. How much Zakat will she pay?

Learn and Write Table of 17


## Exercise \# 7.3

- Web link https://youtu.be/RCgesP7tsBQ

Example: Find the wealth of Ibrahim if he paid Rs.7,500 as Zakat. Solution:
2.5\% of Ibrahim's wealth $=$ Rs. 7,500
$1 \%$ of Ibrahim $=\operatorname{Rs} \frac{7500}{2.5}$
$100 \%$ of Ibrahim $=$ Rs. $\frac{7500}{2.5} \times 100$
$=$ Rs.300,000
2. Saba paid Rs.2,250 as Zakat. What is the worth of her wealth?

## Learn and Write Table of 18



## Exercise \# 7.3

- Web link https://youtu.be/IM2SfeuN7PU

Example : A farmer sold his crop of wheat for Rs.995,400. Findthe amount of Ushr at the rate of $10 \%$.
Solution:
Total Amount = Rs.995,400
Rate of Ushr = 10\%
Amount of Ushr = ?
Amount of Ushr $=10 \%$ of Rs.995,400
10/100 x 995400 = Rs. 99,540
Thus, amount of Ushr is Rs.99,540.
4. Saleem earned Rs. 114,700 from a rice crop and paid Ushr at the rate of 5\%. What amount did he pay as Ushr?

## Learn and Write Table of 19



## Test

1. Komal saves Rs.96,000 in a year. How much will she pay as Zakat?
2. Saleem has $\mathbf{2 , 4 0 0 k g}$ wheat. The price of wheat is Rs.30kg. Find the Ushr that he will pay.

Learn and Write Table of 20


## Unit 7

## Review Exercise

## 1. Tick $(\checkmark)$ the correct answer.

i- Ushr means :
(a) one-fourth
(b) One-fifth
(c) one-eight
(d) one-tenth
ii- The tax which a buyer pays to the saler is called :
(a) GST
(b) Property tax
(c) Zakat
(d) Ushr
iii- An amount that we earn after selling a thing is called :
(a) Tax
(b) Profit
(c) Markup
(d) Ushr
iv- Islam has fixed the rate of zakat:
(a) $2.5 \%$
(b) $5 \%$
(c) $7.5 \%$
(d) $10 \%$
v - In case a piece of land watered by artificial means, theUshr will be:
(a) $2.5 \%$
(b) $4 \%$
(c) $5 \%$
(d) $10 \%$

## 2. Fill in the blanks.

(i) The taxwhichis receivedonaproperty is calledthe $\qquad$ .
(ii) The tax a buyer pays to the seller at the time of buyingthings is called
$\qquad$ _.
(iii) An amount added to a cost price to calculate the sale price is called a
$\qquad$ _.
(iv) Zakat and Ushr are levied as ordered in the $\qquad$ and Sunnah.

