

# **KHALID PUBLIC SCHOOL & COLLEGE** **HAROONABAD**

**Syllabus + Key Book**

**Class: 7th**

**July Term 2<sup>nd</sup> Part**



**محترم والدین!**

1st Part کا سلیبس اور KeyBook دی جا رہی ہے۔

ماہ جولائی کے پیپرز کی تیاری دی گئی Videos اور دیئے گئے سلیبس کے مطابق کروائی جائے۔

ماہ جولائی کے پیپرز 15 July سے شروع کیے جائیں گے۔

## Syllabus

<b>English</b>	Chapter# 6, 7, 8
<b>Maths</b>	Unit# 4, 5
<b>Science</b>	Unit# 3(Topic: Pollination by water Pg: 38) to unit# 5(Elements in periodic table Pg: 64)
<b>SSt</b>	Unit# 3: weathering and climate to Unit# 5
<b>Urdu</b>	اسباق : 9 تا 12
<b>Islamiyat</b>	باب سوم: سبق نمبر 2: غزوہ حنین تا باب چہارم سبق نمبر 3: دعا کی اہمیت اور فضیلت
<b>Nazra</b>	حفظ القرآن: سورۃ الضحیٰ مع ترجمہ، نماز مع ترجمہ مکمل 6 کلمے مع ترجمہ دعائیں مع ترجمہ: دعائے جنازہ، مسجد میں داخل ہونے اور باہر نکلنے کی دعا، آئینہ دیکھنے کی دعا، نیا لباس پہننے کی دعا۔ پارہ: 11، 12
<b>Computer</b>	Unit# 3

# Key Book English

## lesson #8

### (b) Comprehensive Focus

1)ans: Global warming is a gradual increase in the temperature of the earth's atmosphere caused by particular gases. Whereas, climate change is an effect of global warming.

2) ans: Global warming happens because greenhouse gases like carbon dioxide nitro oxide and methane have been increasing tremendously for the last few years.

3) ans: The greenhouse effect is a major cause of global warming. Other cause include natural factors, Human activities etc. One of the natural factors are also causing global warming.

4) ans: One of the adverse consequences of global warming is extreme weather .Weather is rapidly changing in all part of the world. Increased rainfall is witnessed in many parts of the world. This is causing health problem, animal migration and lack of food resources. Extreme heat and droughts, in diverse regions Have become a serious issue.

5) ans:We should create awareness in public about the ill-effects of global warming and how to control it .If we do not take precautionary measure ,it will be fatal for all living creatures on earth. We should contribute to eradicating the causes of global warming.

### Paragraph

My school was celebrated world Environment day on June 5,2019 with great zeal. Many events such a poster-making, debate, slogan writing quiz etc. were held on the theme of 'SAVE EARTH '.Mr. Kamal the MPA of city he had been invited to. He addressing the gathering on the occasion. The chief guest highly praised the performances of the students. I was very excited for my performance. Many cultural programs were conducted which included a play on 'Importance of nature'. My friend Haris won the speech competition he got first prize. At the end the winners of the various competitions were given certificates.

(vi)1. Anaphoric

2.Cataphoric

3. Anaphoric

4. .Cataphoric

5. . Anaphoric

(viii) Use the transitional devices given above in sentences in your notebook.

1)Though: The phone woke me up, even though it wasn't very loud .

2)Besides:-He has no friends besides me.

3)Therefore:-I got there really early; therefore I was first in line.

4)Also:-You may also come.

5) Moreover:-Smoking gives you bad breath. Moreover, it is harmful to your health.

(iv)Two –and –Three consonant cluster.

Two-consonant cluster:- School

Floor

Three –consonant cluster:- Spring

Splashes

Vocabulary Focus:-

(iii) Dictionary words and correct spellings.

1) Climate:- It is difficult to live in extreme climates.

2) Radiation:-Many people worry about radiation emitted by cell phones.

3) Live stoke:-The heavy rains and flooding killed score of livestock.

4) Migration:- The journey of migration isn't apt to be easy.

5) Rapidly:-This is a world that's changing rapidly.

6)Hostile;- I have no idea why he is hostile to me.

### Grammar Focus

**ii)Use the give absolute adjective in sentences in your notebook.**

1)Spotless:-He has a spotless so far.

2)Terrified:-He is terrified of bitten by snake.

3.Boiling:-Bring the sauce to boiling point.

4.Empty:-His hand is empty.

5.Starving:-She's starving herself to try to lose weight.

6.Fatal:-Hepatitis is a potentially fatal disease.

### Kind of verb:-

**(iii)Adverbs of manners:-**

Carelessly, Properly , Quickly

Adverbs of time:-

Tomorrow, Yesterday, Never all day

Adverbs of Place ;:-

Somewhere, Upstairs, Outside.

Adverbs of frequency:-



Always, usually, often.

Adverbs of degree:-

Very, totally

Adverbs of reason:-

Therefore, because, so that.

(iv) Use given adverb to make sentence in your notebook.

1) Really:-I really admire your work.

2) Therefore:-He is crying therefore he must be hurting.

3) Somewhere:-Can we meet somewhere?

4) Always:-I always amazed by your stories.

5) Seriously:- Seriously you can do that.

6) Yesterday:-We meet for lunch Yesterday.

### **Essay 'Environmental Pollution'**

The environment forms a very important aspect of human life because that is where we find the essentials of life e.g. air, water and food. Due to global industrialization and modernization, there has been Environmental Pollution.

The Environmental Pollution has greatly affected of life for animals plants and humans. The types of Environmental Pollution are specific to causes and components of the environment.

Environmental Pollution is classified into groups depending on the natural components as follows, air Pollution ,soil Pollution ,and water Pollution .The contaminants of the environment are called pollutant. The main pollutants are industries because industries emit harmful gases in the atmosphere,which cause air pollution, industrial effluents are also discharged into water bodies causing water pollution.

Environmental Pollution has been a challenge in India. The adverse effects are specific to the type of pollution although some may cut across. Air pollutions has resulted in harm to human health and destruction of the ozone layers in the atmosphere .Water pollution has caused death of aquatic life and identification. Soil pollution has resulted in unhealthy soil.

Environmental Pollution has become a great concern to save our planet. We need to adapt various measure to reduce environment pollution. Some of them includes planting trees, reducing the use of non-renewable resources, proper disposal of wastes, etc. It is the responsibility of every individual to save our environment from getting polluted.

# Key Book Science

## Chapter#5: Structure of an Atom

- Think Back: What is an atom?

Answer: Atom is so tiny particle that cannot see with naked eye. Atom is the smallest particle of an element.

- Can you tell?

Answer: Argon is the element of nobal gas. As we know nobal gases are the inert gases. Argon has completed its octate. So, they cannot share the electron with other atom.

- Work it out. On page#64, 65
- Definitions. On page#71

### Exercise

(1): Answer the following question:-

Q#1: Ans on pg#71

Q#2: Ans on pg#64

Q#3: Ans on pg#62

Solution:  $A=Z+n$

$$80=35+n$$

$$80-35=n$$

$$45=n$$

Q#4:  $MgCl_2$ ,  $NaF$ ,  $CaCl_2$ ,  $AlBr_2$ .

Q#5: Ans on pg#64

Q#6: Ans on pg#63.

(2): Answer the question briefly.

Q#1: Ans on pg#60

Q#2: Ans on pg#68

Q#3: Ans on pg#66

Q#4:

(3): Choose the correct options:

- (d)
- (b)
- (c)

- iv. (a)
- v. (a)

(4): Write 'T' for true and 'F' for false statement:

- i. True
- ii. False
- iii. True
- iv. True
- v. False

## Key Book SSt

### Lesson # 5 Atmospheric Pressure , Humidity & Precipitation

A: Give brief answer.

Ans 1: define from “ recap” point 1<sup>st</sup> pg #40

Ans 2: point waterlies at pg # 35

Ans 3: From recap point # 5pg # 40.

Ans 4: point Evaporation & condensation at pg # 37. Evaporation point cpmplete and condensation point 1<sup>st</sup> two lines.

Ans 5: point forms of precipitation only its sub kinds names at pg # 39.

B: Answer in detail :

Ans 1:”Air pressure belts on earth “pg # 34 from polar high pressure belts .

Ans 2: point cyclones and types of cyclones pg # 36,37.

Ans 3: point pateren of global winds pg # 35.

Ans 4: point condensation clouds pg # 38 water vapour evaporates in the air . the water that make up , clouds travel into the sky with in air as water vapoure , the gas form of water upwards to sky is called clouds .

C : choose the correct option :

- 1. Doldrums
- 2. Sea breeze
- 3. Dew point
- 4. Low
- 5. Rain guage

D: Column :

- 1. Frost : a thin layer of ice crystals on a surface .
- 2. Sleet: a mixture of rain and snow
- 3. Clods visible masses of water droplets or ice crystals in the temperature .
- 4. Tornado : a small column of violently rotating , air , connected to the ground.
- 5. The horizontal movement of air.

# Key Book Computer

## **Chapter#3 Customizing a Word Document**

### ❖ Knowledge Corner.

Allah says; “O you who have believed seek help through patience and prayer indeed, Allah is with the patient”. (Surah Al-Baqarah:153)

### Exercise

Q#1: Circle the correct answer.

- i. Operating system
- ii. Outline view
- iii. Web layout view
- iv. Splitting
- v. Editing
- vi. Paste
- vii. Undo
- viii. Margin
- ix. Symbols
- x. Font

Q#2: Fill in the blanks:

- i. Alter
- ii. Lines
- iii. Important
- iv. Horizontally
- v. Text
- vi. Align
- vii. Well organized
- viii. Top
- ix. Bottom
- x. Edge

Q#3: Give brief answers for the following:

- i) What is a word processor used for?

Answer: A software application which is used for writing, editing, formatting and printing different types of documents is called word processor. Word processors are used in the home, office, and just about everywhere as a variety of documents type can be made. Microsoft word is the most widely used word processor around the world as it is easy to learn and use.

- ii) What are the different views in words?

Answer: The Print layout view shows what your document will look like when it is printed. This view is the default view as word opens with this view already set. Header, footer, columns, and images can be seen in this view. Also, the page breaks are visible to ensure the document is set properly.

iii) Why do we edit document?

Answer: Text editing is when you alter or make certain changes to a document like copy or moving text, deleting or inserting text, etc. You must first select the text that you want to edit like a word, line, paragraph or entire document text.

iv) How does the thesaurus help us?

Answer: A thesaurus tool is built into word that can be used to find synonymous (word with same meaning) or antonyms (word with opposite meaning) of text in your document.

v) Describe the importance of indent?

Answer: Indentation on a paragraph is determined by the width of its lines. You can increase or decrease the indentation of paragraph in word.

The following are different types of indent:

- First line indent: Moves the first line of your paragraph to the right.
- Hanging indent: Controls the left margin to every line except the first one in your paragraph.
- Indent both sides: Moves the left margin to the right or the right margin to the left.
- Increase indent button: Moves text ½ inch from left margin.
- Decrease indent button: Moves text ½ inch to left margin.

Q#4: Give detailed answer for the following:

i) Describe the difference between cut & paste and copy & paste?

Answer:

Cutting & Paste Text	Copy & Paste Text
The cut option is used to remove text from your document and place it in the clipboard. The different text and graphics that are copied or cut are stored in the clipboard so that you can use them again either in the same document or a different file. The paste option is used to move the text or graphics from the clipboard to a point that you want in your current document.	Copy and paste is used when text is taken without removing from a different part of the same or different document and placed somewhere else.

ii) Describe the clipboard and its uses?

Answer: The clipboard is a temporary storage area for text, images, etc. The text and graphics that are copied or cut are stored in the clipboard.

iii) Explain the difference between undo and redo?

Answer:

Undo	Redo
Press ctrl+Z or click on the undo '↶' button if you make a mistake or want to remove the last changes made.	Press ctrl+Y or click on the Redo '↷' button to undo the action on the Quick Access Toolbar, each time you press the undo '↶' button you will be take one step backward.

iv) Explain the steps to change the font type of a document.

Answer: 1) Use Ribbon to change Font

- Open a document you want to change the font of
- Select the text to change
- Go to the Home tab and in the Font group click to open the drop-down menu containing a list of fonts
- Choose the font you want to use
- Selected text font has changed.

2) Use mini toolbar to change Font

- Select the text to change
- Mini Toolbar will show above the selected text
- Click on the Mini toolbar to open the Font drop-down menu
- Select the font and it will be changed in your document.

3) Use Font Dialog Box to change Font

- Select the text to change
- Click the Font dialog box launcher from the Home tab
- The Font dialog box opens. Choose the new font and click Ok.
- Font has been changed in your document.

v) Explain the difference between header and footer.

Answer: The headers and footer of a document can show page, numbers, document title, author's name, date & time, etc. Information at top of the page is shown in the header and information at the bottom of the page is shown in the footers.

- Making Header and Footer for specific pages.  
You can insert a pre-designed header or footer in word. Using the options of different first page and different odd and even pages, you can easily create a different setting of a header and footer.
- All Except First page.



On the first page of the document the headers and footers do not appear.

- Different first page.

The rest of the document has different information that the header and footer on the first page.

- Even/odd header & footer.

On odd and even pages, there is different header and footer information.

Q#5: Match Column A and Column B.

Column A	Column B
1. Margin	Space between edges of the paper and the text
2. Header	Show information at the top of the page
3. Footer	Show information at the bottom of the page
4. Water mark	Graphics/word(s) displayed in background of document
5. Indent	Space between margin and the text
6. Highlight	Mark important text in your document
7. Font style	Bold, Italic, Underline
8. Undo	Remove last changes
9. Redo	Reverse the undo action
10. Symbols	Characters not on the keyboard

## Key Book Urdu

سبق نمبر 11: ایک انوکھی ملاقات

پڑھنے سے پہلے

ہاکی

انسان تندرست رہتا ہے۔ چست رہتا ہے۔ ہشاش بشاش رہتا ہے۔

پڑھنے کے دوران

ورلڈ کپ میں استعمال ہونے والا فٹ بال زیادہ تر پاکستان سے منگوا یا جاتا ہے۔

پہلا ورلڈ کپ یوراگوئے میں کھیلا گیا۔ یوراگوئے نے ہی جیتا۔

کھیل کی نگرانی کرتا ہے۔

آئیں مزید جانیں

فٹ بال کے ورلڈ کپ میں سب سے زیادہ سکور کرنے والے کھلاڑی کا نام لکھیں؟

مشق

الفاظ معانی: ٹیچرز بچوں کو اپنی رہنمائی میں کروائیں۔

تفہیم



2۔ دیے ہوئے سوالات کے جوابات دیں۔

الف۔ فٹ بال سے متعلق ذہنی آزمائش کے ٹیسٹ کی تیاری کے لیے۔

ب۔ باقاعدہ قوانین نہ تھے نہ کھلاڑیوں کی تعداد کا کوئی تعین تھا۔

ج۔ کھیل شروع ہو گئے اور فٹ بال دنیا کا مقبول ترین کھیل بن گیا۔

د۔ گیارہ کھلاڑی ہوتے ہیں۔ گول کیپر، فل بیک، ہاف بیک۔ ان کے علاوہ کھلاڑیوں کو فارورڈ کہا جاتا ہے۔

ہ۔ ریفری کھیل کو اصول و ضوابط کے مطابق کھیلاتا ہے۔

و۔ انسان تندرست و توانا رہتا ہے۔ ہشاش بشاش رہتا ہے۔ ذہنی آسودگی ملتی ہے۔ باقاعدہ قوانین بنائے جائیں۔ کھلاڑی ہلکومتی عتاب کا شکار نہ ہوں۔

3۔ درست جواب پر صحیح کا نشان لگائیں۔

1۔ 90 منٹ

2۔ 1863 میں

3۔ پیلا

4۔ سیالکوٹ

5۔ گیارہ، گیارہ

مل کر کریں بات

4، 5: ٹیچر ز اپنی نگرانی میں کروائیں

قواعد سیکھیں

6۔ جملوں میں نمایاں الفاظ کے جمع بنا کر مناسب تبدیلیوں کے ساتھ جملے دوبارہ لکھیں۔

1۔ تدابیر

2۔ خاموشی

3۔ اخلاق

4۔ سقراط

5۔ رقوم

7۔ جمع الفاظ کے واحد معنی میں سے تلاش کر کے ان کے سامنے لکھیں۔

1۔ خاتون

2۔ جزیرہ

3۔ حقیقت

4۔ شک

5۔ عاقل

6۔ جد

7۔ حر

8- صف

لکھنا سیکھیں

8، 9، 10: ٹیچرز خود کروائیں

عملی سرگرمی

11، 12، 13، 14: ٹیچرز کوڈ بچوں کو اپنی نگرانی میں کروائیں۔

## سبق نمبر 12: ترتیب ہے زندگی

پڑھنے سے پہلے

بچے خود بتائیں

ہر کا ضابطے و قوانین سے کرنا

پڑھنے کے دوران

نظم و ضبط کی پابندی ہر انسان پر

آئیں مزید جانیں

نظم و ضبط کس زبان کا لفظ ہے۔ اس کے معانی کیا ہیں؟

نبی کریم ﷺ نے نظم و ضبط کے متعلق کیا ارشاد فرمایا؟

مشق

الفاظ معانی: ٹیچرز بچوں کو اپنی رہنمائی میں کروائیں۔

تفہیم

2- دیے ہوئے سوالات کے جوابات دیں۔

الف۔ شہد کی مکھیاں اسے لے کر چلتی ہیں تک صفحہ نمبر 67

ب۔ نظم و ضبط

ج۔ صفحہ نمبر 68 اگر ہم اپنا ہر کام سے لے کر سیر انجام دیں سیکھیں تک

د۔ صفحہ نمبر 68: جو قومیں سے لے کر باعث بنتی ہے تک۔

ہ۔ امن و سکون قائم رکھیں۔ ایمان اتحاد کا درس

3- سبق کے مطابق درست پر صحیح کا نشان لگائیں۔

1- ✓	2- x	3- ✓	4- x	5- x
------	------	------	------	------

4- سبق کے مطابق درست لفظ لگا کر جملے مکمل کریں۔

1- طریقہ کار

2- مظاہر فطرت

3- نظام

4۔ دخل اندازی

5۔ اختیار

مل کر کریں بات

5، 6: ٹیچر ز اپنی رہنمائی میں کروائیں۔

قواعد سیکھیں

7۔ دیے ہوئے الفاظ کے جملے بنائیں

1۔ گل: موسم بہار میں بہت گل کھلتے ہیں۔

2۔ گل: یہ گل بہت زرخیز ہے۔

3۔ مخاطب: ٹیچر بچوں سے مخاطب تھی۔

مخاطب: ٹیچر کے مخاطب بچے تھے۔

4۔ پروا: ہمیں دوسروں کی پروا کرنی چاہیے۔

پُروا: آج بہت پُروا چل رہی ہے

5۔ دل: علی کا پڑھائی مین دل نہیں لگتا۔

دل: ٹڈیوں کو بہت برا دل آیا

8۔ دی ہوئی عبارت غور سے پڑھیں خط کشیدہ الفاظ کے معانی لغت میں سے تلاش کر کے مناسب تبدیلیوں کے ساتھ دوبارہ لکھیں۔

درس	دنیا سے	کی وجہ سے	معجزہ	اندھیرے
دنیا کی قوم	مکی	رسوائی	پستی	ملک
وفادار	بیچتی	جگہ		

لکھنا سیکھیں:

9، 10: ٹیچر ز خود اپنی رہنمائی کروائیں۔

عملی سرگرمی:

11، 12: ٹیچر ز خود اپنی رہنمائی میں کروائیں۔

## Key Book islamiyat

سبق نمبر 6: حدیث

سوال نمبر 1۔ درست جواب کے گرد دائرہ لگائیں۔

ا۔ ب	ب۔ ج	ج۔ ا	د۔ ا	ہ۔ ب
------	------	------	------	------

سوال نمبر 2۔ مختصر سوالات کے جوابات لکھیں۔

ا۔ صفحہ 56: اصطلاح میں اس سے ..... کی طرف ہو۔

ب۔ صفحہ 64: قرآن مجید میں اکثر-----ایک ساتھ آیا ہے۔





# CH #5

Check Your Brain 68

Find The Square:

$$a) \frac{4}{9} = \left(\frac{4}{9}\right)^2$$

$$\frac{4 \times 4}{9 \times 9} = \frac{16}{81}$$

$$\frac{16}{81} > \frac{4}{9}$$

$$b) \frac{11}{13} = \left(\frac{11}{13}\right)^2$$

$$\frac{11 \times 11}{13 \times 13} = \frac{121}{169}$$

$$c) \frac{0.25}{100} = \frac{0.25}{100} = \frac{25}{10000}$$

$$\left(\frac{\frac{25}{100}}{100}\right)^2 = \left(\frac{1}{4}\right)^2 = \frac{1}{16}$$

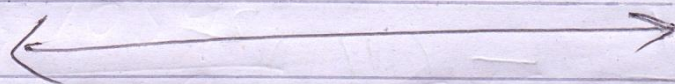


$$\underline{c} \quad 0.25 = \frac{25}{100} = \left(\frac{25}{100}\right)^2$$

$$= \frac{625}{10000}$$

$$\underline{d} \quad 0.83 = \frac{83}{100} = \left(\frac{83}{100}\right)^2$$

$$\frac{83 \times 83}{100 \times 100} = \frac{6889}{10000}$$



Q NO 2 Find The Square:-

$$a \quad 25 = (25)^2 = 25 \times 25 = 625$$

$$b, \quad 77 = (77)^2 = 77 \times 77 = 5929$$

$$c \quad 98 = (98)^2 = 98 \times 98 = 9604$$



d,  $112 = (112)^2 = 112 \times 112 = 12544$

e  $46 = (46)^2 = 2116$

f  $69 = (69)^2 = 4761$

g  $213 = (213)^2 = 45369$

h  $357 = (357)^2 = 127449$

i  $455 = (455)^2 = 207025$

j  $789 = (789)^2 = 622521$

k  $167 = (167)^2 = 27889$

L  $500 = (500)^2 = 250000$

Q3

Without Solving Check  
whether the following  
be perfect squares



## Perfect Squares:-

$$a \quad 441 = 21 \times 21 = 2$$

$$b \quad 625 = 25 \times 25 \text{ OR } 5 \times 5 \times 5 \times 5$$

$$d \quad 1089$$

$$f \quad 1600$$

$$h \quad 2500$$

Perfect square are those number which have complete square number and each number ~~are~~ have in pair form.

$$\begin{array}{r|l} 3 & 1089 \\ \hline 3 & 363 \\ \hline 11 & 121 \\ \hline & 11 \end{array}$$

$$3 \times 3 \times 11 \times 11$$

$$3^2 \times 11^2$$

$$\begin{array}{r|l} 2 & 1600 \\ \hline 2 & 800 \\ \hline 2 & 400 \\ \hline 2 & 200 \\ \hline 2 & 100 \\ \hline 2 & 50 \\ \hline & 25 \end{array}$$

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5$$

$$2^2 \times 2^2 \times 2^2 \times 5^2$$



4 Test whether the Perf  
Square or not.

a) 49

$$7 \times 7 \\ = 7^2$$

$$\begin{array}{r|l} 7 & 49 \\ \hline & 7 \end{array}$$

is a Perfect Square

b) 98

$$2 \times 7 \times 7 \\ 2 \times 7^2$$

$$\begin{array}{r|l} 2 & 98 \\ \hline 7 & 49 \\ \hline & 7 \end{array}$$

is not Perfect

c) 144

$$2 \times 2 \times 2 \times 2 \times 3 \times 3 \\ 2^2 \times 2^2 \times 3^2$$

is a Perfect  
Square.

$$\begin{array}{r|l} 2 & 144 \\ \hline 2 & 72 \\ \hline 2 & 36 \\ \hline 2 & 18 \\ \hline 3 & 9 \\ \hline & 3 \end{array}$$



$$\underline{d} \quad 784$$

$$2 \times 2 \times 2 \times 2 \times 7 \times 7$$

$$2^2 \times 2^2 \times 7^2$$

is Perfect

$$\begin{array}{r} 2 \overline{) 784} \\ 2 \overline{) 392} \\ 2 \overline{) 196} \\ 2 \overline{) 98} \\ 7 \overline{) 49} \\ 7 \end{array}$$

$$e, \quad 625$$

$$5 \times 5 \times 5 \times 5$$

$$5^2 \times 5^2$$

is Perfect

$$\begin{array}{r} 5 \overline{) 625} \\ 5 \overline{) 125} \\ 5 \overline{) 25} \\ 5 \end{array}$$

$$\underline{f} \quad 3125$$

$$5 \times 5 \times 5 \times 5 \times 5$$

$$5^2 \times 5^2 \times 5$$

is not

Perfect

$$\begin{array}{r} 5 \overline{) 3125} \\ 5 \overline{) 625} \\ 5 \overline{) 125} \\ 5 \overline{) 25} \\ 5 \end{array}$$



i) 8100

$$= 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5$$

$$= 2^2 \times 3^4 \times 5^2$$

is Perfect

$$\begin{array}{r} 2 \overline{) 8100} \\ 2 \overline{) 4050} \\ 3 \overline{) 2025} \\ 3 \overline{) 675} \\ 3 \overline{) 225} \\ 3 \overline{) 75} \\ 5 \overline{) 25} \\ 5 \end{array}$$

j)

4800

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times$$

$$3 \times 5 \times 5$$

$$2^2 \times 2^2 \times 2^2 \times 3 \times 5^2$$

is not Perfect

$$\begin{array}{r} 2 \overline{) 4800} \\ 2 \overline{) 2400} \\ 2 \overline{) 1200} \\ 2 \overline{) 600} \\ 2 \overline{) 300} \\ 2 \overline{) 150} \\ 2 \overline{) 75} \\ 3 \overline{) 25} \\ 5 \overline{) 5} \end{array}$$

k) 6481

is not Perfect

6481

L 4500

is not perfect

$$\begin{array}{r} 2 \overline{) 4500} \\ 2 \overline{) 2250} \\ 3 \overline{) 1125} \\ 3 \overline{) 375} \\ 3 \overline{) 125} \end{array} \quad \begin{array}{r} 5 \overline{) 125} \\ 5 \overline{) 25} \\ 5 \end{array}$$



Q5 Tick The Perfect Squares of even numbers:-

c 256

d 324

f 6084

g 207936

i 14884

j 12100

k 100

L 1024

Q6 Verify the square of each of the Proper fraction is less than the fraction.

$$\begin{aligned} \text{a) } \frac{3}{4} &= \left(\frac{3}{4}\right)^2 = \frac{3 \times 3}{4 \times 4} = \frac{9}{16} \\ \frac{9}{16} &< \frac{3}{4} \end{aligned}$$



$$p \quad \frac{4}{11} = \left( \frac{4}{11} \right)^2 = \frac{16}{121}$$

$$\frac{16}{121} < \frac{4}{11}$$

$$q, \quad \frac{6}{13} = \left( \frac{6}{13} \right)^2 = \frac{36}{169}$$

$$\frac{36}{169} < \frac{6}{13}$$

$$h, \quad \frac{11}{21} = \left( \frac{11}{21} \right)^2 = \frac{121}{441}$$

$$\frac{121}{441} < \frac{11}{21}$$

$$i, \quad \frac{45}{46} = \left( \frac{45}{46} \right)^2 = \frac{2025}{2116}$$

$$\frac{2025}{2116} < \frac{45}{46}$$



$$j) \quad \frac{99}{100} = \left( \frac{99}{100} \right)^2 = \frac{9801}{10000}$$

$$\frac{9801}{10000} < \frac{99}{100}$$

$$k) \quad \frac{34}{45} = \left( \frac{34}{45} \right)^2 = \frac{1156}{2025}$$

$$\frac{1156}{2025} < \frac{34}{45}$$

$$l) \quad \frac{17}{100} = \left( \frac{17}{100} \right)^2 = \frac{289}{10000}$$

$$\frac{289}{10000} < \frac{17}{100}$$



Q7  $0.2 = \frac{2}{10} = \left(\frac{2}{10}\right)^2$   
 $= \frac{4}{100} = 0.04$

$$0.04 < 0.2$$

b)  $0.003 = \frac{3}{1000} = \left(\frac{3}{1000}\right)^2$

$$\frac{9}{1000000} = 0.000009$$

$$0.000009 < 0.003$$

c  $0.14 = \left(\frac{14}{100}\right)^2 = \frac{196}{10000}$   
 $= 0.0196$

$$0.0196 < 0.14$$



$$d) \quad 0.10 = \left( \frac{10}{100} \right)^2 = \frac{100}{10000}$$

$$0.1$$

$$e) \quad 0.1 < 0.10$$

$$e \quad 0.55 = \left( \frac{55}{100} \right)^2 = \frac{3025}{10000}$$

$$0.3025$$

$$0.3025 < 0.55$$

$$f) \quad 0.0089 = \left( \frac{89}{10000} \right)^2 = \frac{7921}{100000000}$$

$$0.00007921 < 0.0089$$

$$g) \quad 0.078 = \left( \frac{78}{1000} \right)^2 = \frac{6084}{1000000}$$

$$0.006084 < 0.078$$



$$h) \quad 0.98 = \left( \frac{98}{100} \right)^2 = \frac{9604}{10000}$$

$$0.9604 < 0.98$$

$$i) \quad 0.0102 = \left( \frac{102}{10000} \right)^2$$

$$= \frac{10404}{100000000}$$

$$0.00010404 < 0.0102$$

$$j) \quad 0.05 = \left( \frac{5}{100} \right)^2 = \frac{25}{10000}$$

$$0.0025 < 0.05$$

$$k) \quad 0.100 = \left( \frac{100}{1000} \right)^2 = \frac{10000}{10000000}$$

$$0.01 < 0.100$$



$$\underline{\underline{L}} \quad 0.23 = \left( \frac{23}{100} \right)^2 = \frac{529}{10000}$$

$$0.529 < 0.23$$



Check Your Brain (69)

Find Square <sup>root</sup> by Factorization

a) 5929

$$7 \times 7 \times 11 \times 11$$

$$7^2 \times 11^2$$

$$\begin{array}{r|l} 7 & 5929 \\ \hline & 847 \\ 7 & 847 \\ \hline & 121 \\ 11 & 121 \\ \hline & 11 \end{array}$$

Take Square root

$$\sqrt{7^2 \times 11^2}$$

$$7 \times 11 = 77$$





b) 17956

$$134 \times 134$$

$$\sqrt{(134)^2}$$

$$= 134$$

$$\begin{array}{r} 2 \overline{) 17956} \\ \underline{4} \phantom{00} \\ 2 \phantom{00} \overline{) 8978} \\ \underline{4} \phantom{00} \\ 4 \phantom{00} \overline{) 4489} \\ \underline{4} \phantom{00} \\ 9 \phantom{00} \end{array}$$

c) 32761

$$181 \times 181$$

$$\sqrt{181^2} = 181$$

d) 69169

$$263 \times 263$$

$$\sqrt{(263)^2}$$

$$= 263$$



Check Your Brain

Find Square root

a)  $\frac{121}{144} = \frac{11 \times 11}{2 \times 2 \times 2 \times 2 \times 3 \times 3}$   $\begin{array}{r} 11 \overline{)121} \\ \underline{11} \phantom{0} \\ 11 \phantom{0} \\ \underline{11} \phantom{0} \\ 0 \phantom{0} \end{array}$

$= \frac{11 \times 11}{2^2 \times 2^2 \times 3^2} = \frac{11^2}{2^2 \times 2^2 \times 3^2}$   $\begin{array}{r} 2 \overline{)144} \\ \underline{72} \phantom{0} \\ 72 \phantom{0} \\ \underline{36} \phantom{0} \\ 36 \phantom{0} \\ \underline{18} \phantom{0} \\ 18 \phantom{0} \\ \underline{9} \phantom{0} \\ 9 \phantom{0} \\ \underline{9} \phantom{0} \\ 0 \phantom{0} \end{array}$

$\sqrt{\frac{11^2}{2^2 \times 2^2 \times 3^2}} = \sqrt{11^2}$   $\sqrt{2^2 \times 2^2 \times 3^2}$

$= \frac{11}{12}$

b)  $\frac{169}{256} = \frac{13 \times 13}{2 \times 2 \times 2 \times 2 \times 2 \times 2}$   $\begin{array}{r} 13 \overline{)169} \\ \underline{13} \phantom{0} \\ 39 \phantom{0} \\ \underline{39} \phantom{0} \\ 0 \phantom{0} \end{array}$

$\frac{13^2}{2^2 \times 2^2 \times 2^2 \times 2^2} = \sqrt{\frac{13^2}{2^2 \times 2^2 \times 2^2 \times 2^2}}$   $\begin{array}{r} 2 \overline{)256} \\ \underline{128} \phantom{0} \\ 128 \phantom{0} \\ \underline{64} \phantom{0} \\ 64 \phantom{0} \\ \underline{32} \phantom{0} \\ 32 \phantom{0} \\ \underline{16} \phantom{0} \\ 16 \phantom{0} \\ \underline{8} \phantom{0} \\ 8 \phantom{0} \\ \underline{8} \phantom{0} \\ 0 \phantom{0} \end{array}$



$$\frac{13}{16}$$

c  $0.00064 = \frac{64}{100000}$

$$\begin{array}{r} 2 \overline{) 64} \\ 32 \\ \hline 2 \overline{) 32} \\ 16 \\ \hline 2 \overline{) 16} \\ 8 \\ \hline 2 \overline{) 8} \\ 4 \\ \hline 2 \overline{) 4} \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \overline{) 100000} \\ 50000 \\ \hline 2 \overline{) 50000} \\ 25000 \\ \hline 2 \overline{) 25000} \\ 12500 \\ \hline 2 \overline{) 12500} \\ 6250 \\ \hline 2 \overline{) 6250} \\ 3125 \\ \hline 5 \overline{) 3125} \\ 625 \\ \hline 5 \overline{) 625} \\ 125 \\ \hline 5 \overline{) 125} \\ 25 \\ \hline 5 \overline{) 25} \\ 5 \\ \hline \end{array}$$

$$= \frac{2 \times 2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5 \times 5}$$

$$\sqrt{\frac{2^2 \times 2^2 \times 2^2}{2^2 \times 2^2 \times 5^2 \times 5^2 \times 5^2 \times 2}} = \frac{8}{100\sqrt{10}}$$



$$d, \quad 0.144 = \frac{144}{1000}$$

$$\begin{array}{r} 2 \overline{) 1000} \\ 2 \overline{) 500} \\ 2 \overline{) 250} \\ 5 \overline{) 125} \\ 5 \overline{) 25} \\ 5 \end{array}$$

$$\begin{array}{r} 2 \overline{) 144} \\ 2 \overline{) 72} \\ 2 \overline{) 36} \\ 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \end{array}$$

$$\frac{2 \times 2 \times 2 \times 2 \times 3 \times 3}{2 \times 2 \times 2 \times 5 \times 5 \times 5}$$

$$= \sqrt{\frac{2^2 \times 2^2 \times 3^2}{2^2 \times 5^2 \times 5 \times 2}}$$

$$\sqrt{2^1 \times 2^1 \times 3^1}$$

$$= \frac{12}{10\sqrt{10}}$$



## EXERCISE # 5.2

Q1 Find Square by Factorization.

a) 64

$$= 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

$$= \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2}$$

$$= 8$$

$$\begin{array}{r} 2 \overline{) 64} \\ 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \end{array}$$

b) 121

$$\begin{array}{r} 11 \overline{) 121} \\ 11 \end{array}$$

$$= \frac{11 \times 11}{11} = \sqrt{11^2} = 11$$

c) 1369

$$= 37 \times 37$$

$$37^2 = \sqrt{37^2}$$

$$= 37$$

$$\begin{array}{r} 37 \overline{) 1369} \\ 37 \end{array}$$



$$d, \quad 12544$$

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

$$\times 7 \times 7$$

$$\sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7 \times 7}$$

$$2 \times 2 \times 2 \times 2 \times 7$$

$$16 \times 7 = 112$$

$$2 \overline{) 12544}$$

$$\underline{2 \phantom{0} 6272}$$

$$\underline{2 \phantom{0} 3136}$$

$$\underline{2 \phantom{0} 1568}$$

$$\underline{2 \phantom{0} 784}$$

$$\underline{2 \phantom{0} 392}$$

$$\underline{2 \phantom{0} 196}$$

$$\underline{2 \phantom{0} 98}$$

$$\underline{7 \phantom{0} 49}$$

$$7$$

$$e, \quad 324$$

$$2 \times 2 \times 3 \times 3 \times 3 \times 3$$

$$\sqrt{2 \times 2 \times 3 \times 3 \times 3 \times 3}$$

$$= 2 \times 3 \times 3$$

$$= 18$$

$$2 \overline{) 324}$$

$$\underline{2 \phantom{0} 162}$$

$$\underline{3 \phantom{0} 81}$$

$$\underline{3 \phantom{0} 27}$$

$$\underline{3 \phantom{0} 9}$$

$$3$$



f    1225

$$= 5 \times 5 \times 7 \times 7$$

$$= \sqrt{5^2 \times 7^2}$$

$$\begin{array}{r} 5 \overline{) 1225} \\ \underline{5} \phantom{00} \\ 5 \phantom{00} \\ \underline{5} \phantom{00} \\ 7 \phantom{00} \\ \underline{7} \phantom{00} \\ 0 \end{array}$$

$$5 \times 7 = 35$$

g,    50625

$$= 5 \times 5 \times 5 \times 5 \times 3 \times 3 \times 3 \times 3$$

$$= \sqrt{5^4 \times 3^4}$$

$$= 5 \times 5 \times 3 \times 3$$

$$\begin{array}{r} 5 \overline{) 50625} \\ \underline{5} \phantom{0000} \\ 5 \phantom{0000} \\ \underline{5} \phantom{0000} \\ 5 \phantom{0000} \\ \underline{5} \phantom{0000} \\ 3 \phantom{0000} \\ \underline{3} \phantom{0000} \\ 3 \phantom{0000} \\ \underline{3} \phantom{0000} \\ 9 \phantom{0000} \\ \underline{9} \phantom{0000} \\ 0 \end{array}$$

$$= 225$$

h    625

$$= \sqrt{5^2 \times 5^2}$$

$$= 5 \times 5 = 25$$

$$\begin{array}{r} 5 \overline{) 625} \\ \underline{5} \phantom{00} \\ 1 \phantom{00} \\ \underline{1} \phantom{00} \\ 2 \phantom{00} \\ \underline{2} \phantom{00} \\ 5 \phantom{00} \\ \underline{5} \phantom{00} \\ 0 \end{array}$$



Q2/  
12

a)  $\frac{256}{361}$

$$\begin{array}{r} 19 \overline{) 361} \\ \underline{19} \phantom{00} \\ 19 \phantom{00} \\ \underline{19} \phantom{00} \\ 0 \phantom{00} \end{array}$$

$$\begin{array}{r} 2 \overline{) 256} \\ \underline{2} \phantom{00} 128 \\ \underline{2} \phantom{00} 64 \\ \underline{2} \phantom{00} 32 \\ \underline{2} \phantom{00} 16 \\ \underline{2} \phantom{00} 8 \\ \underline{2} \phantom{00} 4 \\ \underline{2} \phantom{00} 2 \\ \underline{2} \phantom{00} 0 \end{array}$$

$$= \frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}{19 \times 19}$$

$$19 \times 19$$

$$= \frac{\sqrt{2^2 \times 2^2 \times 2^2 \times 2^2}}{19^2}$$

$$= \frac{\sqrt{2^4 \times 2^4 \times 2^4 \times 2^4}}{\sqrt{19^4}} = \frac{16}{19}$$

b)  $3\frac{1}{16} = \frac{49}{16} = \frac{7}{4}$



$$c) \quad 5 \frac{125}{100} = \frac{625}{100} = \frac{25}{10}$$

$$d) \quad \frac{900}{10000} =$$

$$\begin{array}{r} 2 \overline{) 10000} \\ \underline{2 \phantom{0000}} \\ 2 \phantom{0000} \\ \underline{2 \phantom{0000}} \\ 2 \phantom{0000} \\ \underline{5 \phantom{000}} \\ 5 \phantom{000} \\ \underline{5 \phantom{000}} \\ 5 \phantom{000} \\ \underline{5 \phantom{000}} \\ 5 \phantom{000} \\ \underline{5 \phantom{000}} \\ 5 \phantom{000} \end{array}$$

$$\begin{array}{r} 2 \overline{) 900} \\ \underline{2 \phantom{00}} \\ 5 \phantom{00} \\ \underline{5 \phantom{00}} \\ 4 \phantom{00} \\ \underline{3 \phantom{00}} \\ 1 \phantom{00} \\ \underline{1 \phantom{00}} \\ 0 \phantom{00} \end{array}$$

$$= \frac{2 \times 2 \times 5 \times 5 \times 3 \times 3}{2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5}$$

$$= \frac{\sqrt{2^2 \times 5^2 \times 3^2}}{\sqrt{2^4 \times 5^4}}$$

$$= \frac{2 \times 5 \times 3}{2 \times 2 \times 5 \times 5} = \frac{30}{100}$$



$$\begin{array}{r} e \quad 5476 \\ \hline 7569 \end{array}$$

$$\begin{array}{r} 2 \overline{) 5476} \\ \underline{2} \phantom{00} \\ 2738 \\ \underline{2} \phantom{00} \\ 371369 \\ \underline{37} \phantom{00} \end{array}$$

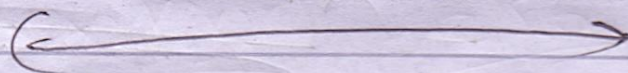
$$\begin{array}{r} 87 \overline{) 7569} \\ \underline{87} \phantom{00} \end{array}$$

$$= \frac{2 \times 2 \times 37 \times 37}{87 \times 87}$$

$$= \frac{2 \times 2 \times 37 \times 37}{87 \times 87}$$

$$= \sqrt{2 \times 2 \times 37 \times 37}$$

$$= \frac{\sqrt{87^2}}{87} = \frac{87}{87}$$



$$f \quad \begin{array}{r} 225 \\ \hline 441 \end{array}$$

$$\begin{array}{r} 5 \overline{) 225} \\ \underline{5} \phantom{00} \\ 45 \\ \underline{5} \phantom{00} \\ 9 \\ \underline{3} \phantom{00} \end{array}$$

$$\begin{array}{r} 21 \overline{) 441} \\ \underline{21} \phantom{00} \\ 21 \end{array}$$

$$= \frac{5 \times 5 \times 3 \times 3}{21 \times 21}$$

$$= \frac{\sqrt{5^2 \times 3^2}}{21} = \frac{15}{21}$$



g)

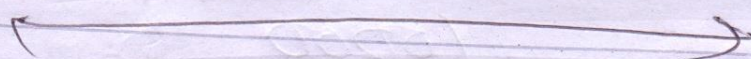
$$\frac{196}{2916}$$

$$\begin{array}{r} 2 \overline{) 196} \\ \underline{2} \phantom{96} \\ 98 \\ \underline{7} \phantom{98} \\ 49 \\ \underline{7} \phantom{49} \\ 7 \end{array}$$

$$\begin{array}{r} 2 \overline{) 2916} \\ \underline{2} \phantom{916} \\ 1458 \\ \underline{3} \phantom{1458} \\ 729 \\ \underline{3} \phantom{729} \\ 243 \\ \underline{3} \phantom{243} \\ 81 \\ \underline{3} \phantom{81} \\ 27 \\ \underline{3} \phantom{27} \\ 9 \\ \underline{3} \phantom{9} \\ 3 \end{array}$$

$$= \frac{2 \times 2 \times 7 \times 7}{2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3}$$

$$\sqrt{\frac{2 \times 7}{2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3}} = \frac{14}{54}$$



h)

$$\frac{9801}{1449}$$

$$\begin{array}{r} 99 \overline{) 9801} \\ \underline{99} \phantom{01} \\ 99 \end{array}$$

$$\begin{array}{r} 2 \overline{) 1449} \\ \underline{2} \phantom{1449} \\ 722 \\ \underline{2} \phantom{722} \\ 362 \\ \underline{2} \phantom{362} \\ 181 \end{array}$$

$$99 \times 99$$

$$\begin{array}{r} 38 \overline{) 1449} \\ \underline{38} \phantom{1449} \\ 38 \end{array}$$

$$\sqrt{\frac{99^2}{38^2}} = \frac{99}{38}$$



Q3

$$a) 0.49 = \frac{49}{100} = \frac{7 \times 7}{10 \times 10}$$

$$\sqrt{\frac{7^2}{10^2}} = \frac{\sqrt{7^2}}{\sqrt{10^2}} = \frac{7}{10}$$

$$= 0.7$$

$$b) 0.0256 = \frac{256}{10000}$$

$$= \frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5}$$

$$= \sqrt{2^2 \times 2^2 \times 2^2 \times 2^2}$$

$$= \sqrt{2^4 \times 2^4 \times 5^2 \times 5^2}$$

$$= \frac{16}{100}$$

$$\begin{array}{r} 2 \overline{) 10000} \\ \underline{2 \phantom{0000}} \\ 2 \phantom{0000} \\ \underline{2 \phantom{0000}} \\ 2 \phantom{0000} \\ \underline{2 \phantom{0000}} \\ 625 \\ \underline{5 \phantom{000}} \\ 125 \\ \underline{5 \phantom{00}} \\ 25 \end{array}$$

$$\begin{array}{r} 2 \overline{) 256} \\ \underline{2 \phantom{00}} \\ 128 \\ \underline{2 \phantom{00}} \\ 64 \\ \underline{2 \phantom{00}} \\ 32 \\ \underline{2 \phantom{00}} \\ 16 \\ \underline{2 \phantom{00}} \\ 8 \\ \underline{2 \phantom{00}} \\ 4 \\ \underline{2 \phantom{00}} \\ 2 \end{array}$$



$$\underline{c} \quad 1.69 = \frac{169}{100} = \frac{13}{10}$$

$$\underline{d} \quad 56.25 = \frac{5625}{100}$$

$$\begin{array}{r|l} 5 & 5625 \\ \hline 5 & 1125 \\ \hline 5 & 225 \\ \hline 5 & 45 \\ \hline 5 & 9 \\ \hline 3 & 3 \end{array}$$

$$\begin{array}{r|l} 2 & 100 \\ \hline 2 & 50 \\ \hline 5 & 25 \\ \hline & 5 \end{array}$$

$$5 \times 5 \times 5 \times 5 \times 3 \times 3$$

$$= \frac{2 \times 2 \times 5 \times 5}{100}$$

$$= \frac{\sqrt{5^2 \times 5^2 \times 3^2}}{\sqrt{2^2 \times 5^2}} = \frac{\sqrt{5^2 \times 5^2 \times 3^2}}{\sqrt{2^2 \times 5^2}}$$

$$= \frac{75}{10} = 7.5$$



$$e, 7.84 = \frac{784}{100}$$

$$\begin{array}{r} 2 \overline{) 784} \\ 2 \overline{) 392} \\ 2 \overline{) 196} \\ 2 \overline{) 98} \\ 7 \overline{) 49} \\ 7 \end{array}$$

$$2 \times 2 \times 2 \times 2 \times 7 \times 7$$

$$2 \times 2 \times 5 \times 5$$

$$\sqrt{\overset{1}{2} \times \overset{1}{2} \times \overset{1}{7} \times \overset{1}{7}}$$

$$= \sqrt{2^2 \times 5^2}$$

$$= \frac{28}{10} = 2.8$$



$$f, 11.56 = \frac{1156}{100}$$

$$\begin{array}{r} 2 \overline{) 1156} \\ 2 \overline{) 578} \\ 2 \overline{) 289} \\ \sqrt{12} \end{array}$$

$$\begin{array}{r} 34 \overline{) 1156} \\ 34 \end{array}$$

$$= \frac{34 \times 34}{10 \times 10}$$

$$= \left( \frac{34}{10} \right)$$



$$\underline{g} \quad 5.29 = \frac{529}{100} = \frac{23 \times 23}{10 \times 10}$$

$$23 \overline{) 529} \\ \underline{23} \phantom{00}$$

$$= \sqrt{\frac{23^2}{10^2}}$$

$$= \frac{\sqrt{23^2}}{\sqrt{10^2}} = \frac{23}{10}$$

h

$$1.8496 = \frac{18496}{10000}$$

$$\begin{array}{r} 2 \overline{) 18496} \\ \underline{2} \phantom{00} 9248 \\ \underline{2} \phantom{00} 4624 \\ \underline{2} \phantom{00} 2312 \\ \underline{2} \phantom{00} 1156 \\ \underline{2} \phantom{00} 578 \\ \phantom{00} 289 \end{array}$$

$$136 \overline{) 18496} \\ \underline{136} \phantom{00}$$

$$= \frac{136}{100} \text{ ms}$$



# Check Your Brain 71

Find Square by division Method:-

a) 2209

= 47

$$\begin{array}{r} 47 \\ 4 \overline{) 2209} \\ \underline{16} \phantom{00} \\ 609 \\ 87 \overline{) 609} \\ \underline{609} \\ \hline X \end{array}$$

b) 4624

= 68

$$\begin{array}{r} 68 \\ 6 \overline{) 4624} \\ \underline{36} \phantom{00} \\ 1024 \\ 128 \overline{) 1024} \\ \underline{1024} \\ \hline X \end{array}$$

c) 10816

= 104

$$\begin{array}{r} 104 \\ 1 \overline{) 10816} \\ \underline{1} \phantom{0000} \\ 0816 \\ 204 \overline{) 0816} \\ \underline{816} \\ \hline X \end{array}$$



b)

$$\begin{array}{r} 1521 \\ \hline 2809 \\ \hline 53 \\ \hline 5 \overline{) 2809} \\ \underline{25} \phantom{00} \\ 309 \\ \hline 103 \overline{) 309} \\ \underline{309} \\ \hline X \end{array}$$

$$\begin{array}{r} 939 \\ \hline 3 \overline{) 1521} \\ \underline{9} \phantom{00} \\ 621 \\ \hline 69 \overline{) 621} \\ \underline{621} \\ \hline X \end{array}$$

$$= \frac{39}{53}$$



c)

$$0.81 = \frac{81}{100} = \frac{9}{10}$$

d)

$$0.02304 = \frac{2304}{100000}$$

$$\begin{array}{r} 58 \\ \hline 4 \overline{) 2304} \\ \underline{16} \phantom{00} \\ 704 \\ \hline 88 \overline{) 704} \\ \underline{704} \\ \hline X \end{array}$$

$$\begin{array}{r} 100000 \\ \hline 316 \dots \\ \hline 3 \overline{) 100000} \\ \underline{9} \phantom{00000} \\ 100 \phantom{000} \\ \hline 61 \phantom{00} \\ \hline 3900 \\ \underline{3756} \\ 144 \end{array}$$



# EX # 5.3

Q1 Find square root by Division Method:-

a) 729

= 27

$$\begin{array}{r} 27 \\ \hline 2 \overline{) 729} \\ \underline{4} \phantom{00} \\ 329 \\ \underline{329} \\ 0 \end{array}$$

b) 4489

= 67

$$\begin{array}{r} 67 \\ \hline 6 \overline{) 4489} \\ \underline{36} \phantom{00} \\ 889 \\ \underline{889} \\ 0 \end{array}$$

c) 9604

= 98

$$\begin{array}{r} 98 \\ \hline 9 \overline{) 9604} \\ \underline{81} \phantom{00} \\ 1504 \\ \underline{1504} \\ 0 \end{array}$$



$$d) \quad 7569$$

$$= 87$$

$$\begin{array}{r}
 87 \\
 8 \overline{) 7569} \\
 \underline{64} \phantom{00} \\
 1169 \\
 \underline{1169} \\
 \hline
 X
 \end{array}$$

e

$$28224$$

$$= 168$$

$$\begin{array}{r}
 168 \\
 1 \overline{) 28224} \\
 \underline{1} \phantom{00000} \\
 182 \\
 \underline{156} \phantom{00} \\
 2624 \\
 \underline{2624} \\
 \hline
 X
 \end{array}$$



f

1225

= 35

$$\begin{array}{r}
 35 \\
 \hline
 3 \overline{) 1225} \\
 \underline{9} \phantom{00} \\
 325 \\
 \underline{325} \\
 \hline
 0
 \end{array}$$

← →

g

72900

= 270

$$\begin{array}{r}
 270 \\
 \hline
 2 \overline{) 72900} \\
 \underline{4} \phantom{00} \\
 329 \\
 \underline{329} \\
 \hline
 0
 \end{array}$$

← →

h

12544

= 112

$$\begin{array}{r}
 112 \\
 \hline
 1 \overline{) 12544} \\
 \underline{1} \phantom{00} \\
 25 \\
 \underline{21} \\
 444 \\
 \underline{444} \\
 \hline
 0
 \end{array}$$



Q2 Find square root of the fractions:-

a)  $\frac{64}{144} = \frac{8}{12}$

←————→

b)  $7 \frac{4}{36} = \frac{256}{36} = \frac{16}{6}$

$$\begin{array}{r} 16 \\ \hline 1 \overline{) 256} \\ \underline{1} \phantom{00} \\ 156 \\ \underline{156} \\ 0 \end{array}$$

←————→

c)  $11 \frac{14}{25} = \frac{289}{25} = \frac{17}{5}$

$$\begin{array}{r} 17 \\ \hline 1 \overline{) 289} \\ \underline{1} \phantom{00} \\ 189 \\ \underline{189} \\ 0 \end{array}$$

←————→



$$d) \frac{1600}{169} = \frac{40}{13}$$

$$e) \frac{2916}{1444}$$

$$\begin{array}{r} 54 \\ 5 \overline{) 2916} \\ \underline{25} \phantom{00} \\ 416 \\ \underline{416} \\ 0 \end{array} \quad \begin{array}{r} 38 \\ 3 \overline{) 1444} \\ \underline{9} \phantom{00} \\ 544 \\ \underline{544} \\ 0 \end{array}$$

$$= \frac{54}{38}$$

← →

$$f) \frac{196}{484}$$

$$= \frac{14}{22}$$

$$\begin{array}{r} 22 \\ 2 \overline{) 484} \\ \underline{4} \phantom{00} \\ 84 \\ \underline{84} \\ 0 \end{array}$$



$$\begin{array}{r} 9 \cdot \quad 4225 \\ \hline 5476 \end{array}$$

$$\begin{array}{r} 74 \\ \hline 7 \overline{) 5476} \\ \underline{49} \end{array}$$

$$\begin{array}{r} 144 \overline{) 576} \\ \underline{576} \\ \hline X \end{array}$$

$$\begin{array}{r} 65 \\ \hline 6 \overline{) 4225} \\ \underline{36} \\ \hline 625 \\ \underline{625} \\ \hline X \end{array}$$

$$= \frac{65}{74}$$

$$\frac{6889}{7225} =$$

$$\begin{array}{r} 83 \\ \hline 8 \overline{) 6889} \\ \underline{64} \\ \hline 489 \\ \underline{489} \\ \hline X \end{array}$$

$$\begin{array}{r} 85 \\ \hline 8 \overline{) 7225} \\ \underline{64} \\ \hline 825 \\ \underline{825} \\ \hline X \end{array}$$

$$= \frac{83}{85}$$



Q3 Find square root of decimal number:-

a)  $0.1089 = \frac{1089}{10000}$

$$\begin{array}{r} 100 \quad 10000 \\ 1 \overline{) 10000} \\ \underline{100} \phantom{00} \\ 00 \end{array} \quad \begin{array}{r} 33 \\ 3 \overline{) 1089} \\ \underline{9} \phantom{00} \\ 189 \\ \underline{189} \\ 0 \end{array}$$

$= \frac{33}{100} = 0.33$

b)  $0.0025 = \frac{25}{10000} = \frac{5}{100}$

c)  $9.61 = \frac{961}{100}$

$= \frac{31}{10}$

$$\begin{array}{r} 31 \\ 3 \overline{) 961} \\ \underline{9} \phantom{00} \\ 61 \\ \underline{61} \\ 0 \end{array}$$

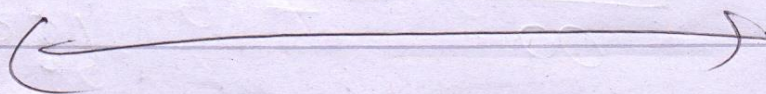


$$\underline{d} \quad 62.41 = \frac{6241}{100}$$

$$= \frac{79}{10}$$

$$7 \overline{) 6241}$$

$$\begin{array}{r} 79 \\ \times 79 \\ \hline 6241 \\ 6241 \\ \hline 1341 \\ 1341 \\ \hline X \end{array}$$



$$e \quad 79.21 = \frac{7921}{100}$$

$$8 \overline{) 7921}$$

$$\begin{array}{r} 89 \\ \times 89 \\ \hline 7921 \\ 7921 \\ \hline 1521 \\ 1521 \\ \hline X \end{array}$$

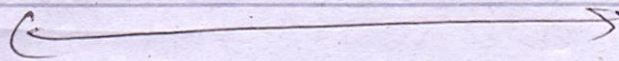
$$= \frac{88}{10}$$



$$f \quad 86.49 = \frac{8649}{100}$$

$$= \frac{93}{10}$$

$$\begin{array}{r} 93 \\ 9 \overline{) 8649} \\ \underline{81} \phantom{00} \\ 549 \\ \underline{549} \\ 0 \end{array}$$



$$g \quad 92.16 = \frac{9216}{100}$$

$$\begin{array}{r} 96 \\ 9 \overline{) 9216} \\ \underline{81} \phantom{00} \\ 1116 \\ \underline{1116} \\ 0 \end{array} = \frac{96}{10}$$



$$h \quad 112.36 = \frac{11236}{100}$$

$$\begin{array}{r} 106 \\ \overline{100} \\ 1 \overline{) 11236} \\ \underline{11} \phantom{236} \\ 2 \phantom{36} \\ 20 \overline{) 1236} \\ \underline{12} \phantom{36} \\ 36 \\ \underline{36} \\ 0 \end{array} = \frac{106}{10}$$

X



SINCE 1993

خالد پبلک سکول



## EX # 5.1

Q1 Total chairs = 6084

Find number of rows

Take under root 6084

$$\begin{array}{r} 78 \\ \hline 7 \overline{) 6084} \\ \underline{49} \phantom{00} \\ 1184 \\ \underline{1184} \\ 0 \end{array}$$

Total no of rows are 78.



Q2 length = 144 m

width = 81 m

Find area = ?

area =  $l \times w$

$$144 \times 81$$



$$\begin{array}{r}
 89 \\
 8 \overline{) 7921} \\
 \underline{64} \phantom{00} \\
 1521 \\
 \underline{1521} \\
 \hline
 \phantom{0000} X
 \end{array}$$

length is 89m



Q4



Q5

length of Base = 32 cm

altitude is = 18 cm

$$\text{Area} = l \times w$$

Base  $\times$  altitude

$$32 \times 18$$

$$576 \text{ cm}^2$$

Then area is  $\sqrt{576}$

$$\begin{array}{r} 24 \\ 2 \overline{) 576} \\ \underline{4} \phantom{00} \\ 176 \\ \underline{176} \\ 0 \end{array}$$

~~Area~~

length is 24 cm





⑥

Total area =  $10404 \text{ m}^2$

Find square = ?

$$\begin{array}{r} 102 \\ \hline 1 \overline{) 10404} \\ \underline{1} \phantom{00} \\ 202 \phantom{00} \\ \underline{202} \phantom{00} \\ 404 \\ \underline{404} \\ \hline \end{array}$$

Find The cost at the rate RS 435 per meter

$$102 \times 435 =$$

$$44370 \text{ RS}$$



Q7

Area of square shape garden =  $144 \text{ m}^2$

Perimeter = ?



$$\text{Area} = l \times l$$

$$144 = l^2$$

Take under root

$$\sqrt{144} = \sqrt{l^2}$$

$$12 = l$$

$$\text{Perimeter is} = 4 \times 12$$

$$= 48 \text{ m}$$





## Review Exercise

Q2 Find Squares :-

a)  $91 = (91)^2 = 8281$

b)  $107 = (107)^2 = 11449$

c)  $127 = (127)^2 = 16129$

d)  $156 = (156)^2 = 24336$

e)  $149 = (149)^2 = 22201$

f)  $16 = (16)^2 = 256$

Q3 Test whether The Perfect Square or not :-

a)  $121 = 11$  is Perfect

b)  $3725$

Not Perfect

$$\begin{array}{r} 5 \overline{) 3725} \\ \underline{5} \phantom{00} \\ 745 \\ \underline{5} \phantom{00} \\ 149 \end{array}$$



c 5184

=  $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3$   
 $\times 3 \times 3 \times 3$

$\sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3}$

is Perfect Square

$2 \times 2 \times 2 \times 3 \times 3$

72

$$\begin{array}{r|l} 2 & 5184 \\ \hline & 2592 \\ \hline 2 & 1296 \\ \hline 2 & 648 \\ \hline 2 & 324 \\ \hline 2 & 162 \\ \hline 2 & 81 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \end{array}$$

d 2604

is not Perfect

$$\begin{array}{r|l} 2 & 2604 \\ \hline & 1302 \\ \hline 2 & 651 \\ \hline 3 & 217 \\ \hline 7 & 31 \end{array}$$

e) 1521

Not Perfect

$$\begin{array}{r|l} 3 & 1521 \\ \hline & 507 \\ \hline 3 & 169 \end{array}$$



Q6 Find Square by Factorization and division.

a) 2809

= 53

$$\begin{array}{r} 53 \overline{) 2809} \\ \underline{53} \\ 53 \end{array}$$

$$\begin{array}{r} 5 \overline{) 2809} \\ \underline{25} \end{array}$$

$$\begin{array}{r} 103 \overline{) 309} \\ \underline{309} \\ \times \end{array}$$

b 4225

$$\begin{array}{r} \sqrt{4225} \\ 5 \times 13 \\ 5 \times 13 \end{array}$$

= 65

$$\begin{array}{r} 5 \overline{) 4225} \\ \underline{5} \\ 845 \\ \underline{13} \\ 169 \\ \underline{13} \end{array}$$

$$\begin{array}{r} 65 \overline{) 4225} \\ \underline{36} \\ 625 \\ \underline{625} \\ \times \end{array}$$

65



C

$$6400 = 80$$

$$\begin{array}{r} 80 \\ \hline 8 \overline{) 6400} \\ \underline{64} \phantom{00} \\ \hline \end{array}$$

d

$$15376$$

$$\begin{array}{r} 2 \overline{) 15376} \\ \underline{2} \phantom{0000} \\ 2 \phantom{0000} \\ \underline{2} \phantom{0000} \\ 2 \phantom{0000} \\ \underline{2} \phantom{0000} \\ 31 \phantom{00} \\ \underline{31} \phantom{00} \\ 31 \phantom{00} \\ \underline{31} \phantom{00} \\ 0 \phantom{00} \end{array}$$

$$\sqrt{2 \times 2 \times 31 \times 31}$$

$$= 4 \times 31$$

$$124 = 124$$



$$\begin{array}{r} 124 \\ \hline 1 \overline{) 15376} \\ \underline{1} \phantom{0000} \\ 22 \phantom{0000} \\ \underline{22} \phantom{0000} \\ 53 \phantom{00} \\ \underline{53} \phantom{00} \\ 976 \phantom{00} \\ \underline{976} \phantom{00} \\ 0 \phantom{00} \end{array}$$



Q7 Find Square root of the fractions:-

$$a) \frac{9}{16} = \frac{3}{4} = \frac{3}{4}$$

$$b) \frac{22801}{24964}$$

$$\begin{array}{r} 151 \overline{) 22801} \\ \underline{151} \end{array}$$

$$\frac{151 \times 151}{2 \times 2 + 79 \times 79}$$

$$2 \times 2 + 79 \times 79$$

$$\begin{array}{r} 2 \overline{) 24964} \\ \underline{2} \phantom{00} \\ 12482 \\ \underline{2} \phantom{00} \\ 6241 \\ \underline{79} \phantom{00} \\ 28 \end{array}$$

$$\sqrt{\frac{151^2}{2^2 \times 79^2}} = \frac{151}{2 \times 79}$$

$$= \frac{151}{158}$$



By division method:-

$$\begin{array}{r} 22801 \\ \hline 25964 \end{array}$$

25

158

301

$$\begin{array}{r} 1 \overline{) 24964} \\ \underline{1} \phantom{0000} \\ 149 \phantom{00} \end{array}$$

25

$$\begin{array}{r} 149 \\ \underline{125} \\ 2464 \end{array}$$

308

$$\begin{array}{r} 2464 \\ \underline{2464} \\ X \end{array}$$

$$\begin{array}{r} 151 \overline{) 22801} \\ \underline{1} \phantom{0000} \\ 128 \phantom{00} \\ \underline{128} \phantom{00} \\ 301 \phantom{00} \\ \underline{301} \phantom{00} \\ X \end{array}$$

$$= \frac{151}{158}$$



$$\underline{c} \quad \frac{27225}{31329}$$

$$\begin{array}{r|l} 3 & 31329 \\ \hline 3 & 10443 \\ \hline 59 & 3481 \\ \hline & 59 \end{array}$$

$$\begin{array}{r|l} 5 & 27225 \\ \hline 5 & 5445 \\ \hline 3 & 1815 \\ \hline 3 & 363 \\ \hline 11 & 121 \\ \hline & 11 \end{array}$$

$$\sqrt{\frac{5^2 \times \cancel{3}^2 \times 11^2}{\cancel{3}^2 \times 59^2}} = \frac{5 \times 11 \times 3}{59 \times 3}$$

$$= \frac{55 \times 3}{59 \times 3} = \frac{165}{177}$$

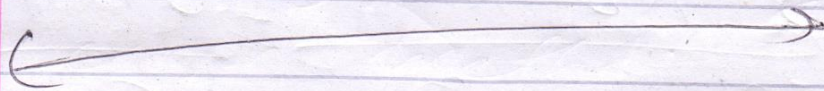
By division method:- 165

$$\frac{27225}{31329}$$

$$\begin{array}{r|l} 1 & 27225 \\ \hline 26 & 172 \\ & 156 \\ \hline 325 & 1625 \\ & 1625 \\ \hline & X \end{array}$$



$$\begin{array}{r}
 177 \\
 \hline
 1 \quad 31329 \\
 \hline
 27 \quad 213 \\
 \quad 189 \\
 \hline
 347 \quad 2429 \\
 \quad 2429 \\
 \hline
 \quad \quad X \\
 \hline
 = \frac{165}{177}
 \end{array}$$



QNO8 Find square root of decimal number by factorization method.

Q  $376.36 = \frac{37636}{100}$

$$\begin{array}{r}
 2 \overline{) 37636} \\
 \underline{2} \phantom{00} \\
 18818 \\
 \underline{2} \phantom{00} \\
 9409 \\
 \underline{97} \phantom{00} \\
 97
 \end{array}$$

$$\begin{aligned}
 &= \sqrt{\frac{2^2 \times 97^2}{10^2}} = \frac{2 \times 97}{10} \\
 &= \frac{194}{10}
 \end{aligned}$$



$$b) \quad 1.2100 = \frac{12100}{10000}$$

$$\begin{array}{r|l} 2 & 12100 \\ \hline 2 & 6050 \\ \hline 5 & 3025 \\ \hline 5 & 605 \\ \hline 11 & 121 \\ \hline & 11 \end{array}$$

$$\begin{array}{r|l} 2 & 12100 \\ \hline 2 & 1100 \\ \hline 5 & 325 \\ \hline 5 & 65 \\ \hline & 13 \end{array}$$

$$= \sqrt{2^2 \times 5^2 \times 11^2}$$

$$= \sqrt{2^2 \times 5^2 \times 11^2}$$

$$= \sqrt{2^2 \times 2^2 \times 5^2 \times 5^2}$$

$$= 110$$

$$= \frac{110}{100}$$

$$\begin{array}{r|l} 2 & 10000 \\ \hline 2 & 5000 \\ \hline 2 & 2500 \\ \hline 2 & 1250 \\ \hline 5 & 625 \\ \hline 5 & 125 \\ \hline 5 & 25 \\ \hline & 5 \end{array}$$

PC



$$\underline{c} \quad 1.44 = \frac{144}{100} = \frac{12}{10}$$

$$d \quad 0.09 = \frac{9}{100} = \frac{3}{10}$$



Q9 Find Square Root by division method.

Q1)

$$8.41 = \frac{841}{100} = \frac{29}{10}$$

$$\begin{array}{r} 29 \\ \hline 2 \overline{) 841} \\ \underline{4} \phantom{1} \\ 441 \\ \underline{441} \\ \hline X \end{array}$$



b

$$0.1681 = \frac{1681}{10000}$$

41

10000

4

1681

16

81

81

81

X

= 41

100

100

10000

1

60



c

$$28.09 = 2809$$

100

= 53

10

53

2809

25

5

809

103

309

X



$$d) \quad 182.25 = \frac{18225}{100}$$

$$\begin{array}{r} 135 \\ 135 \overline{) 18225} \\ \underline{135} \phantom{00} \\ 4725 \\ 135 \overline{) 4725} \\ \underline{135} \phantom{00} \\ 3425 \\ 135 \overline{) 3425} \\ \underline{135} \phantom{00} \\ 2125 \\ 135 \overline{) 2125} \\ \underline{135} \phantom{00} \\ 775 \\ 135 \overline{) 775} \\ \underline{135} \phantom{00} \\ 640 \\ 135 \overline{) 640} \\ \underline{135} \phantom{00} \\ 505 \\ 135 \overline{) 505} \\ \underline{135} \phantom{00} \\ 370 \\ 135 \overline{) 370} \\ \underline{135} \phantom{00} \\ 235 \\ 135 \overline{) 235} \\ \underline{135} \phantom{00} \\ 100 \end{array}$$



Q10 Area of square garden  
is  $= 1936 \text{ m}^2$

$$\begin{aligned} \text{length of one side} &= \sqrt{1936} \\ &= 44 \end{aligned}$$

$$\begin{aligned} \text{Four side length} &= 4 \times 44 \\ &= 176 \text{ m} \end{aligned}$$



Kind cost = ?

Cost of one meter = 205 RS

$$\begin{aligned}\text{Cost of } 176\text{m} &= 176 \times 205 \\ &= 36080 \text{ RS}\end{aligned}$$



Q11

Base of Parallelogram = 16 cm

altitude = 9 cm

Area = Base  $\times$  Altitude

$$16 \times 9$$

$$= 144 \text{ cm}^2$$

length of one side is

$$= \sqrt{144}$$

$$= 12 \text{ cm}$$



2 Area of square shaped room =  $98.01 \text{ m}^2$

Find Perimeter = ?

$$\begin{array}{r} 99 \\ 9 \overline{) 9801} \\ \underline{81} \\ 1701 \\ 189 \overline{) 1701} \\ \underline{1701} \\ \times \end{array}$$

$$= \frac{9801}{100} = \frac{99}{100}$$

$$= \frac{99}{10} = 9.9 \text{ m}$$

$$\begin{aligned} \text{Perimeter} &= 4 \times 9.9 \\ &= 39.6 \text{ m} \end{aligned}$$

