ADVERTISEMENTS.

SKIN TORTURES

And Every Distressing Irritation of the Skin and Scalp Instantly Relieved by a Bath with CUTICURA SOAP

And a single anointing with CUTICURA, the great skin cure and purest of emollients. This is the purest, sweetest, most speedy, permanent, and economical treatment for torturing, disfiguring, itching, burning, bleeding, scaly, crusted, and pimply skin and scalp humors with loss of hair, and has received the endorsement of physicians, chemists, and nurses throughout the world.

Millions of Women

USE CUTICURA SOAP, exclusively, for preserving, purifying, and beautifying the skin, for cleansing the scalp of crusts, scales, and dandruff, and the stopping of falling hair, for softening, whitening, and soothing red, rough, and sore hands, in the form of baths for annoying irritations, inflammations, and chafings, or too free or offensive perspiration in the form of washes for ulcerative weaknesses, and for many sanative antiseptic purposes which readily suggest themselves to women, and especially mothers, and for all the purposes of the toilet, bath, and nursery. No amount of persuasion can induce those who have once used it to use any other, especially for preserving and purifying the skin, scalp, and hair of infants and children. CUTICURA SOAP combines delicate emollient properties derived from CUTICURA, the great skin cure, with the purest of cleansing ingredients and the most refreshing of flower odors. No other *medicated* soap ever compounded is to be compared with it for preserving, purifying, and beautifying the skin, scalp, hair, and hands. No other foreign or domestic *toilet* soap, however expensive, is to be compared with it for all the purposes of the toilet, bath, and nursery. Thus it combines in ONE SOAP at ONE PRICE, viz., TWENTY-FIVE CENTS, the BEST skin and complexion soap, the BEST toilet soap and BEST baby soap in the world.

Complete External and Internal Treatment for Every Humor, Price, $1.25.,

Consisting of CUTICURA SOAP (25c.), to cleanse the skin of crusts and scales and soften the thickened cuticle, CUTICURA OINTMENT (50c.), to instantly allay itching, inflammation, and irritation, and soothe and heal, and CUTICURA RESOLVENT (50c.), to cool and cleanse the blood. A SINGLE SET is often sufficient to cure the most torturing, disfiguring, and humiliating skin, scalp, and blood humors, with loss of hair, when all else fails. Sold throughout the world. POTTER DRUG AND CHEM. CORP., Sole Props., Boston, Mass. "All about the Skin, Scalp, and Hair," free.

AMUSEMENTS.

★TIVOLI★

TO-NIGHT! TO-NIGHT! TO-NIGHT!
—THURSDAY, SUNDAY NIGHTS!—
SATURDAY MATINEE!

"CARMEN."

The Great Diva COLLAMARINI as CARMEN. RUSSO, SALASSA, REPETTO, NICOLINI, SCHUSTER IN THE CAST.

Wednesday, Friday, Saturday Evenings,

"THE JEWESS."

Sung by Lucenti, Lichter, Stewart and Barron Berthald (His Farewell Appearances).
POPULAR PRICES.....25c and 50c
Telephone Bush 9.

SPECIAL—THURSDAY AFTERNOON, Oct. 25.
GRAND SYMPHONY CONCERT.
Direction of Max Hirschfeld. Orchestra of 60. Seats on Sale THURSDAY, Sherman, Clay & Co.'s Store.

COLUMBIA THE LEADING THEATER

SECOND GREAT WEEK
—EVERY NIGHT (EXCEPT SUNDAY)—
MATINEE SATURDAY.
THE ONLY REAL

QUO VADIS.

The Original London, New York and Chicago Production.
THE BEST PLAY. THE BEST PLAYERS. THE MOST IMPOSING PRODUCTION.
PRICES.....$1.50, $1, 75c, 50c, 25c

MOROSCO'S GRAND OPERA HOUSE

MATINEES SATURDAY AND SUNDAY.
THE NEW FRAWLEY COMPANY
—ONLY THIS WEEK—
William Haworth's Great Patriotic Naval Drama

THE ENSIGN

Next Week—MADAME SANS GENE!
EVENING PRICES.....10c, 15c, 25c, 50c.
A Few Front Rows in Orchestra 75c.
MATINEE PRICES.....10c, 15c, 25c, 50c.
—No Higher—
Branch Ticket Office—Emporium.

Orpheum

HARD TO BEAT!
LIZZIE B. RAYMOND, EDGAR ATCHISON - ELY, RAUCHLE, TWIN HALE SISTERS, TOM NAWN & CO., THE GREAT EVERHART, EDDIE GIRARD AND JESSIE GARDNER, WILLIS FAMILY, BIOGRAPH.

Reserved Seats, 25c; Balcony, 10c; Opera Chairs and Box Seats, 50c.
MATINEES—Wednesday, Saturday and Sunday

ALHAMBRA

Alf Ellinghouse, Proprietor and Manager.
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Every Evening This Week, Mat. Saturday.
"THEY COME WITH BANNERS WAVING."
PLAYING TO STANDING ROOM.
TO SEE

THE MAN FROM MEXICO

That Funny Farce is Repeating Its Former Record.
WITH GEORGE C. BONIFACE JR. and a Select Comedy Cast.
First Time at Popular Prices.
Evening.....15c, 25c, 35c, 50c and 75c
Matinee .....15c, 25c, 35c and 50c
Next Sunday Afternoon, Another Stellar Attraction From New York—"BROWN'S IN TOWN."

ALCAZAR THEATRE

THE BEST EVER.
TO-NIGHT And ENTIRE WEEK.
Sumptuous Spectacular Production.
THE CORSICAN BROTHERS!
Adapted by Howard Hall From Alexander Dumas' Novel.
MATINEE SATURDAY AND SUNDAY.
Next Week, an Original Romantic Drama—
"A SOLDIER OF THE EMPIRE."

FABBRI'S THEATER
(ODD FELLOWS' HALL.)
—TUESDAY, OCTOBER 16, 1900.—
Immense Success of Our New Enterprise.
The week's programme will consist of a delightful farce comedy, AN OPERATTA BY OFFENBACH, together with an olio of specialties, dances, songs and sketches of rare merit by a host of eminent artists. Every Friday evening GERMAN PERFORMANCE by a splendid company of players. Popular prices—25c and 50c. Box sheet at Sherman, Clay & Co.'s

COUNTY CLERKS ENLIGHTENED AS TO AMENDMENTS

Attorney General Writes an Opinion Pointing Out Proper Course.

An opinion which will be of great interest to the County Clerks and voters of this State was forwarded yesterday by Attorney General Tirey L. Ford to James C. Rives, District Attorney of Los Angeles County. It is in relation to the constitutional amendments which are to be voted on at the coming election and enlightens the county officials as to their duty in printing the same on the ballots.

In 1883 the Legislature passed an act referred to in his opinion, the first section of which provides for the publication of constitutional amendments in the newspapers. This section also provides that each amendment shall be voted on separately in the manner and form set forth by the Governor in his proclamation. In 1899, however, the Legislature changed the method of publishing constitutional amendments. To obviate publishing them in the newspapers it was directed that copies be printed in the State Printing Office and mailed by the Secretary of State to the various County Clerks and by them sent to the individual voters of their respective counties. The Legislature tried to repeal the old act of 1883, but did not succeed, and it is still in force.

The Governor did not designate any manner or form in which the constitutional amendments should be printed on the ballots, so that many County Clerks were left in doubt as to how they should be printed. The following opinion in answer to a query put to the Attorney General by District Attorney Rives points out the true course:

In your communication of October 6, 1900, you quote from section 1197, Political Code, as follows: "Whenever any question or constitutional amendment is to be submitted to the vote of the people there shall be printed another column or columns, with voting squares, at the right of the last or blank column in which such question or constitutional amendment shall be printed, and opposite such question or constitutional amendment to be voted on, in separate lines, the words 'Yes' or 'No' shall be printed."

You then ask if, under the provisions of that section, proposed constitutional amendments must be printed in full upon the ballot.

You also refer to the act of 1883 (Statutes, 1883, p. 53), which provides that "each amendment must be voted upon separately from the others, in the manner and form designated by the Governor," and which would seem to be a complete answer to your inquiry.

You further say, however: "Assuming the act of 1883 to be in force, the Governor in his proclamation has not indicated, as heretofore, any abbreviated form in which the same shall be printed upon the ticket, so that, assuming he had such a right, he has not exercised it."

In my opinion the act of 1883 (except as modified by subsequent legislation) is still in force, though People vs. Curry has left this somewhat in doubt, but, inasmuch as you state that its provisions have not been followed we will omit it from our consideration.

The same Legislature that amended section 1197 of the Political Code so that it should include the printing of proposed constitutional amendments upon the ballot proposed seven constitutional amendments, the printing of which in full upon the ballots is practically impossible and certainly impossible without the swelling of the ballot to absurd and impracticable proportions. It is scarcely conceivable that the Legislature could have intended any such results, and, under well known rules of statutory construction we are not at liberty to so construe a statute as to render it impracticable or absurd where it may be reasonably construed along rational lines.

Keeping this rule in view we note that the word "printed," as used in section 1197, was not new to the amendment of 1899, and that it was clearly the purpose of the Legislature, by that amendment, to do no more than to add "constitutional amendments" to the "questions" that were to be answered by "Yes" or "No." But this would not necessarily imply the "printing" of such amendments in full. Rather would it imply a printed interrogatory which could be answered by "Yes" or "No," according as the voter desired to vote for or against the proposed amendment. The word "print," according to the lexicographers, may mean "to record," "to describe," "to characterize," etc., and such must have been the sense in which it was employed by the Legislature in section 1197 of the Political Code.

This view is strengthened by the language of the Supreme Court of this State in Oakland Paving Company vs. Tompkins, 72 Cal., 5, in discussing the proper construction to be placed upon the words "shall be entered" in section 1 of article XVIII of our State constitution. Says the court:

"But it does not follow from this that the language of the instrument must be understood literally. The same rules of construction must be applied, to ascertain what its requirements are, as though it were not mandatory and prohibitory, and we think, when an act commanded or authorized may be done in different ways, either of which would be strict compliance with the terms of the instrument understood in some common and popular sense, either mode may be pursued, unless some reason is discoverable for holding that one of such modes only will answer. If, for instance, the direction to enter the amendment in the journal is complied with, in some usual and popular sense of the language, either by copying the amendment into the journal or by placing upon the journal an identifying reference only, either will do unless the context shows a different intention."

The view here expressed is also in harmony with that portion of the constitutional provision last above referred to reading as follows: "Should more amendments than one be submitted at the same election they shall be so prepared and distinguished by numbers or otherwise, that each can be voted on separately."

Nor does there appear to be any necessity for the printing in full upon the ballots of proposed constitutional amendments. Under the provisions of section 1194, Political Code, a copy of every proposed amendment is mailed to each voter at least ten days before election, thus giving to such voter full and complete information in respect to such amendments. When he comes to vote, however, the requirements of the law would seem to be satisfied with any reasonable method whereby such amendments could be appropriately identified and distinguished, "by number or otherwise," so that "each can be voted on separately" in the manner set forth in section 1205 of the Political Code.

I have not considered the legal effect of a noncompliance with the provisions of section 2 of the act of 1883 above referred to, and expressly withhold the expression of any opinion thereon. Very truly yours,

TIREY L. FORD, Attorney General.

BUNKO MEN WILL BE EXHIBITED AT THE CITY PRISON

Four bunko men—R. G. Evans, alias "Chippy"; Frank Lester, F. M. Morgan and "Little Nels" Johnson—were arrested yesterday morning in a doorway at Taylor and Eddy streets by Detectives Ryan and Crockett and locked up in the tanks. They are suspected of having bunkoed two strangers. October 4 William R. Mann of Bakersfield was taken to McGlynn's saloon, Mason and Eddy streets, and induced to part with $10 and a check for $50. Payment of the check was stopped. A few days later John Kramer of Angels Camp was taken to a room at 423 Eddy street and was relieved of $47 50. Mann and Kramer had a look at the four men at the prison yesterday afternoon, but could not positively identify them.

Evans was taken to San Rafael in the afternoon, where he is wanted on a charge of grand larceny. The complaining witness against him is Joe Escallier, a saloon-keeper at Ross station. It is alleged that on the night of August 16 Evans and two other men called at the saloon and bunkoed Escallier out of $180. Edward Williams, another bunko man, was arrested on the same charge, but the case was dismissed. Evans alleges that he gave $45 to an official in San Rafael to "square" the case.

Lester, Morgan and Johnson will be kept in the tanks and shown the officers of the different watches. They will probably be released if they promise to leave the city.

ROSENBAUM WILL CONTEST DROPPED

Opposition to the Probating of Document Suddenly Withdrawn.

The will of the late Emil B. Rosenbaum will not be contested nor will his estate be dragged through the probate court to the music of an opposition more or less bitter from his near relatives. It was at first believed that this decision was due to the fact that the brother, A. M. Rosenbaum, was willing to let bygones be bygones and the wishes of his dead brother stand, but last night he denied any knowledge of the matter, leaving the inference either that his attorney, Sidney Ehrman, acted without his consent, or that the concession had been wrung from him much to his own dissatisfaction.

Since the will of Emile B. Rosenbaum was filed there has been a contest following it, but the only active contestant has been Alfred M. Rosenbaumn of this city. The two other brothers, Charles and Sam, are in Europe and the two sisters, Mrs. Isaac and Mrs. Sig Strassberg, have never supported the proceeding, so Alfred Rosenbaum was left to make the fight practically alone. There was no hint of compromise or dismissal and both sides were preparing for the trial of the contest, which was sent for to-day, when Mr. Ehrman called upon Vogelsang & Brown, attorneys for Mrs. Sarah Rosenbaum, widow of deceased, to whom all his estate was left, and announced that the contest would be dismissed. No reason was given, the only explanation being that Mr. Rosenbaum wished to dismiss his contest, and the dismissal was filed in the afternoon.

Various reasons for the sudden change of front on the part of the contestant have been advanced by those interested in the case, but no one is willing to say he knows just what the matter is. It is probable, however, that business interests compelled the action. The brothers were in a partnership and upon the death of Emile it became necessary to settle up the partnership. Should the contest be carried on it would only delay the matter, and should the contest prove successful the settlement would have to be made anyway. And if it proved unsuccessful the difficulties of a settlement would become further complicated. It is probably that reason therefore that has forced the dismissal.

The contest was never very popular anyway, and the difficulty of proving that "Ducksie" Rosenbaum was of unsound mind at the time of his death became more apparent as the time for the trial drew near. The dead brother left his wife about $300,000, and each of the living brothers and sisters had much more than that to live upon. To break the will meant little to them and much to the widow. So the contest has been dismissed and the estate will be quietly put through probate and distributed as "Ducksie" Rosenbaum directed.

Taylor Escaped Easily.

J. E. Taylor was sentenced yesterday by United States District Judge de Haven to pay a fine of $100, he having pleaded guilty of having unlawfully used the mails by sending Mexican lottery circulars through them. As there was no alternative Taylor made the affidavit of a pauper and was allowed to go.

SUTTER-STREET RAILROAD PAYS A HEAVY FINE

Usurps Bush-Street Franchise and Is Forced to Pay $5000.

Attorney General Tirey L. Ford Receives the Sum and Turns It Over to the State Treasurer.

Attorney General Tirey L. Ford yesterday turned over to the State Treasurer the sum of $5000, which was paid into his office by the Sutter-street Railroad Company in settlement of a fine imposed by the Superior Court for usurping a franchise.

The sum was not paid without a struggle. For the past year the case had been in the lower and Supreme courts and the best legal talent was employed on both sides. The railroad was punished through the efforts of General Warfield of the California Hotel. He tired of seeing the unused tracks of the Sutter-street railroad on Bush street and asked leave of the Attorney General to bring quo warranto proceedings against the road in the name of the State. Permission being granted a suit was filed and the Attorney General and Messrs. Freeman and Bates appeared in behalf of General Warfield. Napthaly, Freidenrich & Ackerman defended the railroad corporation. The lower court found that the Sutter-street railroad had been guilty of usurping the franchise and imposed a fine of $5000 on the corporation.

An appeal was taken to the Supreme Court and the case was argued at length and submitted. The court handed down an opinion affirming the trial Judge's decision. It then devolved upon the railroad company to pay its fine, but when General Warfield demanded interest on the sum it was denied him. Counsel for the corporation took an appeal and the Supreme court decided that the fine was in the nature of a criminal one and was not a judgment that bears interest.

Representatives of the Sutter-street road called on the Attorney General yesterday and handed over a check for the sum named. The legal tender was immediately sent to the Treasurer and will be added to the State's bank account.

FRED S. KNIGHT WEDS MRS. PARKER

Only Relatives Attend the Quiet Afternoon Ceremony at Trinity Church.

Frederick S. Knight and Mrs. Elizabeth Parker were quietly married yesterday afternoon at 3 o'clock in Trinity Church. Rev. F. W. Clampett performed the ceremony. Only the immediate relatives and a few intimate friends of the contracting parties were present. The bride was unattended. Charles E. Knight, brother of the groom, acted as best man. The bride looked extremely pretty in an elegant blue cloth traveling gown.

Mr. and Mrs. Knight left on the afternoon train for San Jose, where they will spend their honeymoon. On the 31st they sail on the Alameda for their future home in Honolulu.

MRS. CLARK APPEARS IN POLICE COURT

She Is Instructed by Judge Mogan, but It Is Said There Will Be No Prosecution.

Mrs. Grace Clark appeared before Judge Mogan yesterday morning on the charge of assault to murder and was instructed as to her rights. She was represented by Attorney W. M. Cannon, who objected to the instruction for the reason that there would be no prosecution. He said that the woman's husband had forgiven the act and it was unnecessary for any action to be taken. The case was continued till the 22d inst.

Mrs. Clark was closely veiled and appeared to be laboring under strong excitement as she stood before the clerk's desk. After she left the courtroom she said that she understood her husband intended concentrating all his efforts on securing the custody of their two children and would not prosecute her.

An operation was to be performed upon Clark at the Waldeck Hospital yesterday, and when the case is again called his condition will be definitely known.

Normal School Lectures.

The San Francisco State Normal School announces that the course of lectures by Professor W. J. V. Osterhout, "Problem of the Plant," which have been given at the Mark Hopkins Institute of Art on Tuesday afternoons at 4 o'clock, will hereafter be continued at the State Normal School at the same hour, commencing this afternoon. Henry Weinstock will deliver the second lecture of his course at the State Normal School to-morrow afternoon. His topic will be "American Youth and Its Irreverence."

For the Galveston Fund.

A musical and literary entertainment will be given under the auspices of four young ladies—Misses M. Giorgiani, M. Carrick, D. Merle and E. Sresovich—at Golden Gate Hall to-morrow evening, in aid of the Galveston sufferers. Among the many who have volunteered their services are William Hynes, David Manlloyd Jones, S. J. Sandy, Dr. Maude Noble, Miss F. Conner, E. Crow, Miss Sherin Murphy and students of Notre Dame College.

ADVERTISEMENTS.

Large Variety of the Latest Novelties in Fur and Sealskin Garments

Including MUFFS, NECK BOAS, SCARFS, FUR HATS, etc., at
REASONABLE PRICES.
Repairing, Dyeing and Dressing at Short Notice.
AD. KOCOUR, 121 Post St
(Don't Mistake the Number.)
Rooms 7 to 11, over O'Connor, Moffatt & Co.'s. Phone Black 3743

MEN
LOST VIGOR RESTORED!
Call or write for book, free.
DR. COOPER & CO.,
318 Kearny Street,
San Francisco, Cal.

SKIN
$500 if my Skin Ointment fails to cure any case of eczema or tetter, or if one application fails to stop the itching. Price 25 cents. All druggists, or sent post paid on receipt of price. DR. PAUL DE FORD, 175 N. Spring St., Los Angeles, Cal.

DR. HALL'S REINVIGORATOR
HELP FOR YOU
Five hundred reward for any case we cannot cure. This secret remedy stops all losses in 24 hours, cures Emissions, Impotency, Varicocele, Gonorrhoea, Gleet, Fits, Strictures, Lost Manhood and all wasting effects of self-abuse or excesses. Sent sealed, $2 bottle; 3 bottles, $5; guaranteed to cure any case. Address HALL'S MEDICAL INSTITUTE, 855 Broadway, Oakland, Cal. Also for sale at 1078½ Market st., S. F. All private diseases quickly cured. Send for free book.

Dr. Bennett's Electric Belt
Makes weak men and women strong and strong men and women stronger. Rooms 5 and 6, 47 Post st., San Francisco, Cal.

AMUSEMENTS.

California THE POPULAR Theatre HOUSE
...TO-NIGHT...
AND ALL THIS WEEK, MATINEE SATURDAY, Whiting & Willis' Comedians in the Polite Comedy Classic,
A HINDOO HOODOO
Commencing Next Sunday Afternoon,
WM. H. WEST'S BIG MINSTREL JUBILEE.
Positively the biggest show that Mr. West has ever brought to the Pacific Coast.

FISCHER'S CONCERT HOUSE. Admission 10c.
J. Warren Keene, Alice Raymond, Miss Maybelle, Mae Tunison, Eudora Forde, Oscar Lleman, Robert Ellis, Antonio Vargas, Harold Basford and New Moving Pictures.
Reserved Seats, 25c; Matinee Sunday.

SUTRO BATHS.
OPEN NIGHTS.
Open Daily From 7 a. m. to 11 p. m.
Bathing From 7 a. m. to 10 p. m.
ADMISSION 10c. CHILDREN 5c.
Bathing, including admission, 25c; Children, 20c.

COAST MANUFACTURERS AND JOBBERS MEET TO-DAY

Officers Will Be Elected and Matters of Importance to Organization Discussed.

The annual meeting of the Pacific Coast Manufacturers' and Producers' Association will be held this afternoon at the rooms of the San Francisco Board of Trade. Officers for the year will be elected and annual reports will be received. The most important matter to come before the organization is that concerning the proceedings before the Interstate Commerce Commissioners, in which the St. Louis jobbers were the plaintiffs and the jobbers and manufacturers of the Pacific Coast the actual but not nominal defendants. All the testimony in that somewhat famous suit has been taken with the exception of some rebuttal testimony in favor of the contention of the Middle West jobbers.

The case is so nearly closed that Attorney Pillsbury has planned to go to Washington to make his argument for the Pacific Coast interests next month.

ADVERTISEMENTS.

EASE YOUR BURDENS BY USING GOLD DUST WASHING POWDER

Let your head save your hands. Let Gold Dust do the work for you. It makes glad the hearts of those who are not happy unless everything is clean. Gold Dust is woman's best friend, dirt's worst enemy.

"Housework is hard work without Gold Dust."

THE CALL'S HOME STUDY CIRCLE

NIGHT SCHOOL: HOW TO DO THINGS.

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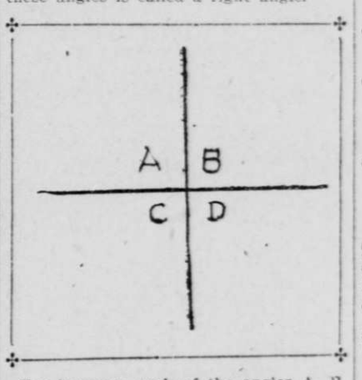
NIGHT SCHOOL COURSE.

These lessons will differ largely. Some of them are intended for beginners, others are for more advanced students. Each lesson will be complete in itself and students may select from the course the work in which they are individually interested. There will be lessons in arithmetic, algebra, mechanics, drawing, electrical measurements, business, composition and a great many other immediately practical subjects.

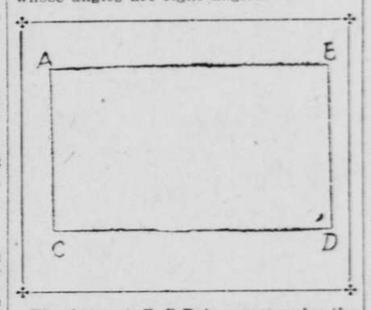
1. HOW TO MEASURE RECT-ANGLES.

When one straight line crosses another so as to form four equal angles, each of these angles is called a right angle.

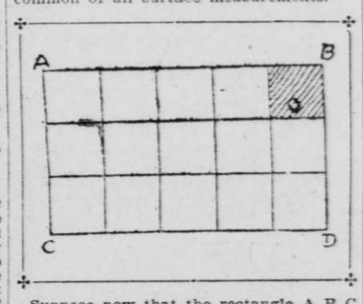


For instance, each of the angles A, B, C and D is a right angle.

A rectangle is a four-sided figure containing four right angles; that is, it is a figure whose opposite sides are equal and whose angles are right angles.



The figure A B C D is a rectangle; the surface of the ceiling or of the floor of a room or any of the walls may be a rectangle; the surface of a strip of carpet or of a field or of a paved court may be a rectangle. The rectangle is the most common of all surface measurements.



Suppose now that the rectangle A B C D is 5 feet long and 3 feet wide, and we desire to know how many square feet it contains. Divide it into square feet, as shown in the figure; there are 5 one way and 3 the other way. Now count the squares and we find that there are 15, or a number equal to the length (5 feet) multiplied by the breadth (3 feet). Then to find the area of a rectangle we simply multiply the length by the breadth.

If we know the area of a rectangle and the length of one of the sides, we can find the length of the other side by dividing the area by the length already known.

Exercises.

1. Find the area in square yards of a rectangular exhibition room 210 feet long by 96 feet wide.

Note—There are 9 square feet in a square yard.

2. Find the area in square inches of a tile floor 7 feet 6 inches long by 6 feet 4 inches wide.

Note—There are 144 square inches in a square foot.

3. The floor of a room is twice as long as it is wide. The distance around the room is 72 feet. Find the area in square feet.

Note—Divide the room into two equal parts, then find the area of each part.

4. Find the cost of covering a rectangle 27 inches by 18 inches with gold leaf at 7½ cents a square inch.

5. Find the cost of a piece of canvas 27 feet long by 18 inches wide at 35 cents a square yard.

6. A garden plat is 12 rods long by 18 yards wide. Find the cost of sodding it at 12½ cents a square yard.

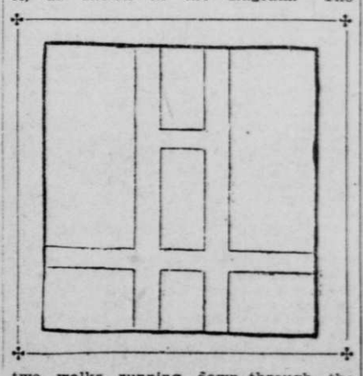
Note—There are 16½ feet in a rod.

7. A rectangular school yard is 18 rods by 12 rods. It is surrounded by a tight board fence 9 feet high. Find the cost of painting the fence, both sides, at 4½ cents a square yard.

8. A street half a mile long is to be paved with asphalt. The asphalt is to reach from curb to curb, a distance of 66 feet. Find the expense of paving at $2 10 per square yard.

Note—There are 320 rods in a mile.

9. A vegetable garden 100 yards square has walks 1½ feet wide running through it, as shown in the diagram. The



two walks running down through the center are 48 feet apart. Find the cost of asphalt paving these walks at $2 per square yard.

10. A field is 160 rods long by 64 rods wide. How many acres does it contain?

Note—There are 160 square rods in an acre.

11. A piece of timber land is 30 miles long by 4½ miles wide. What is it worth at $9 an acre?

Note—There are 640 acres in a square mile.

12. What will it cost to paint the walls and ceiling of a hall 64 feet long, 21 feet wide and 18 feet high at 90 cents a square yard?

Answers.

(1) 2240 square yards. (2) 6840 square inches. (3) 288 square feet. (4) $36 45. (5) $18 90. (6) $148 50. (7) $89 10. (8) $40.656. (9) $315. (10) 64 acres. (11) $777,600. (12) $440 40.

II. HOW TO DO SIMPLE EQUA-TIONS.

Note—This lesson is given early in the course for the reason that a knowledge of simple equations will be necessary in some of the lessons in mechanics and in electrical measurements. Any one who can do elementary arithmetic should be able to solve simple problems by equations.

An equation is a statement that two numerical expressions are equal; thus $6 \times 4 = 24$ is an equation. Now, if 4 is represented by x and the multiplication sign is omitted we have $6x = 24$, the usual algebraical method of writing equations. Note the following illustration:

$$(3 \times 4) + (7 \times 4) = 40$$

Let x stand for 4 and remove the multiplication signs and we have

$$3x + 7x = 40$$

Add these and we have

$$10x = 40$$

That is, 10 times 4 equals 40.

Illustrative Exercise.

1. If $2x + 3x + 4x = 36$, find the value of x.

Add and we have $9x = 36$
therefore $x = 4$

2. If $12x - 4x - 3x = 20$, find the value of x.

$$12x - 7x = 20$$

Subtract 7 from 12 and we have

$$5x = 20$$
$$x = 4$$

3. What number added to twice 14 equals 50?

Let x equal the number, then

$$x + 28 = 50$$
$$x = 50 - 28$$
$$x = 22$$

Note—In transferring a number from one side of an equation to another always change the sign; if it is a plus change to a minus and if a minus change to a plus. The reason for this is readily seen in the above illustration, where 28 is taken from one side of the equation to the other.

4. Five times a certain number added to six times the number equals 55; find the number.

Let x equal the unknown number, then

$$5x + 6 = 55$$
$$11x = 55$$
$$x = 5$$

The student will now proceed to solve the following exercises:

1. $3x + 7x = 100$.
2. $4x - 2x + 7x = 36$.
3. $9x + 2x - 4x = 49$.
4. $2x + 6x - x = 70$.
5. $12x + 10x - 3x = 57$.
6. $6x + 3x + 9x = 108$.
7. $17 - x = 2x - 1$.
8. $7x - 9 = 4x + 12$.
9. $2x + 6 = x + 11$.
10. $26 - 8x = 80 - 14x$.

Find the unknown number.

11. Three times a number added to seven times the number equals 90; find the number.

12. The sum of two numbers is 89 and their difference is 43; find the numbers.

Note—If x equals one of the number, $89 - x$ equals the other.

13. The sum of two numbers is 35 and three times the smaller one is double the greater; find the numbers.

14. Divide the number 35 into two parts so that the greater shall be six times the smaller.

15. Divide 75 apples between two boys so that for every apple one boy receives the other may get four.

16. What number added to twice itself makes 72?

17. Find a number such that when 12 is added to its double the sum will be 28.

18. If I add 46 to a certain number the result will be three times as large as the original number. What is the original number?

19. A fish is 18 inches long; its head is equal in length to the tail and its body is five times the length of the head and tail together. What is the length of the head?

20. Divide $280 among A, B and C so that A may have twice as much as B and B three times as much as C.

21. Find two numbers whose sum is 31 and whose difference is 5.

22. The difference of two numbers is 54 and their sum is 88. What are the numbers?

23. Find two numbers such that their sum is 51 and their difference is 15.

24. What two numbers are those whose difference is 14 and whose sum is 48?

25. Two numbers differ by 8, and four times the less exceeds twice the greater by 10. What are the numbers?

Answers.

(1) 10; (2) 4; (3) 7; (4) 10; (5) 3; (6) 6; (7) 6; (8) 1; (9) 5; (10) 9; (11) 9; (12) 23, 66; (13) 21, 14; (14) 5, 30; (15) 15 apples, 60 apples; (16) 24; (17) 8; (18) 23; (19) 1½ inches; (20) C has $28, B $84, A $168; (21) 13, 18; (22) 17, 71; (23) 18, 33; (24) 17, 31; (25) 13, 21.

GRANT WAS SUED.

It Was When He Was an Army Captain Stationed at Vancouver, Or.

The Washington County archives contain a partial history of a case wherein suit was brought against a man who afterward became President of the United States. The case was filed years ago, when Oregon was yet a Territory and when the defendant was an officer at Vancouver barracks, then known as Columbia barracks.

This was away back in 1854, when nearly all the supplies for the Vancouver post were purchased at San Francisco and when no transcontinental roads or telegraph lines bound the West to civilization; when no telegram of to-morrow could tell the department at Washington that an officer of the United States army was to-day derelict in his duty. The details of the story which led up to the case cannot be learned, but the trouble grew out of a draft on Captain U. S. Grant, who bore the rank of captain and assistant quartermaster. The draft was for $1200, and was signed by a lieutenant at San Francisco, and reads as follows:

$1200.

San Francisco, July 30, 1853.—At three days' sight, please pay to Adams & Co., or order, twelve hundred dollars, and charge the same to my account.—George H. Derby, Lieutenant Corps Engineers.

To Captain U. S. Grant, A. A. Q. M., Columbia Barracks, Oregon.

The draft was accepted by Grant on the 12th day of August, 1853, and a year later it had not been paid. Adams & Co., through their agent, Justin Steinburger, then commenced suit against him in the District Court. They filed a bond in a sum equal to the face of the draft, and, being unable to get a summons served on the defendant owing to his being a resident of another territory, the case went by default and a judgment was granted.

Richard E. Wiley was then the Sheriff of Washington County, and he watched his opportunity to catch the young captain on the Oregon side. After several trips, he happened to be in Portland one day when Captain Grant came in on a boat, bringing with him his horse. Sheriff Wiley attached the animal as soon as the captain landed. As soon as Grant recovered from his surprise, he asked Wiley to go with him to Adams & Co.'s agent, where he thought he could arrange things satisfactorily. Arriving, Grant paid a part of the judgment in cash and gave his note for the balance, thus securing his release. The case was overlooked by the papers of that day, and has never before been made public.

Richard Everett Wiley, the Sheriff who served the process, was a pioneer of 1845, emigrating from Ohio. Upon arriving in Oregon he set up the plant of the Oregon Pioneer, purchased by J. S Griffin, this being the first newspaper plant brought to the Territory. The paper was published by Father Griffin at his farm, two miles from where Hillsboro now stands. As Sheriff of the Tualatin district, in the late '40s, Wiley had dominion over what in part now comprises Clatsop, Columbia, Yamhill, Multnomah, Tillamook and Clackamas counties. In 1855 Mr. Wiley married Miss M. J. Baldra, who was one of the first white women born in Oregon. She still survives, and resides at Newberg—Mrs. Wiley-Edwards. Sheriff Wiley died May 27, 1880.—Portland Oregonian.

New Ocean Greyhound.

The famous Deutschland cost $3,332,000; displacement 23,200 tons; accommodation 1057 passengers; crew 525. It has established a new record for ocean steamers. Among the great remedies of the world Hostetter's Stomach Bitters holds the record with its fifty years of cures of constipation, indigestion and biliousness. It gets at the root of the disease and effects a cure. The genuine has our Private Revenue Stamp over the neck of the bottle.