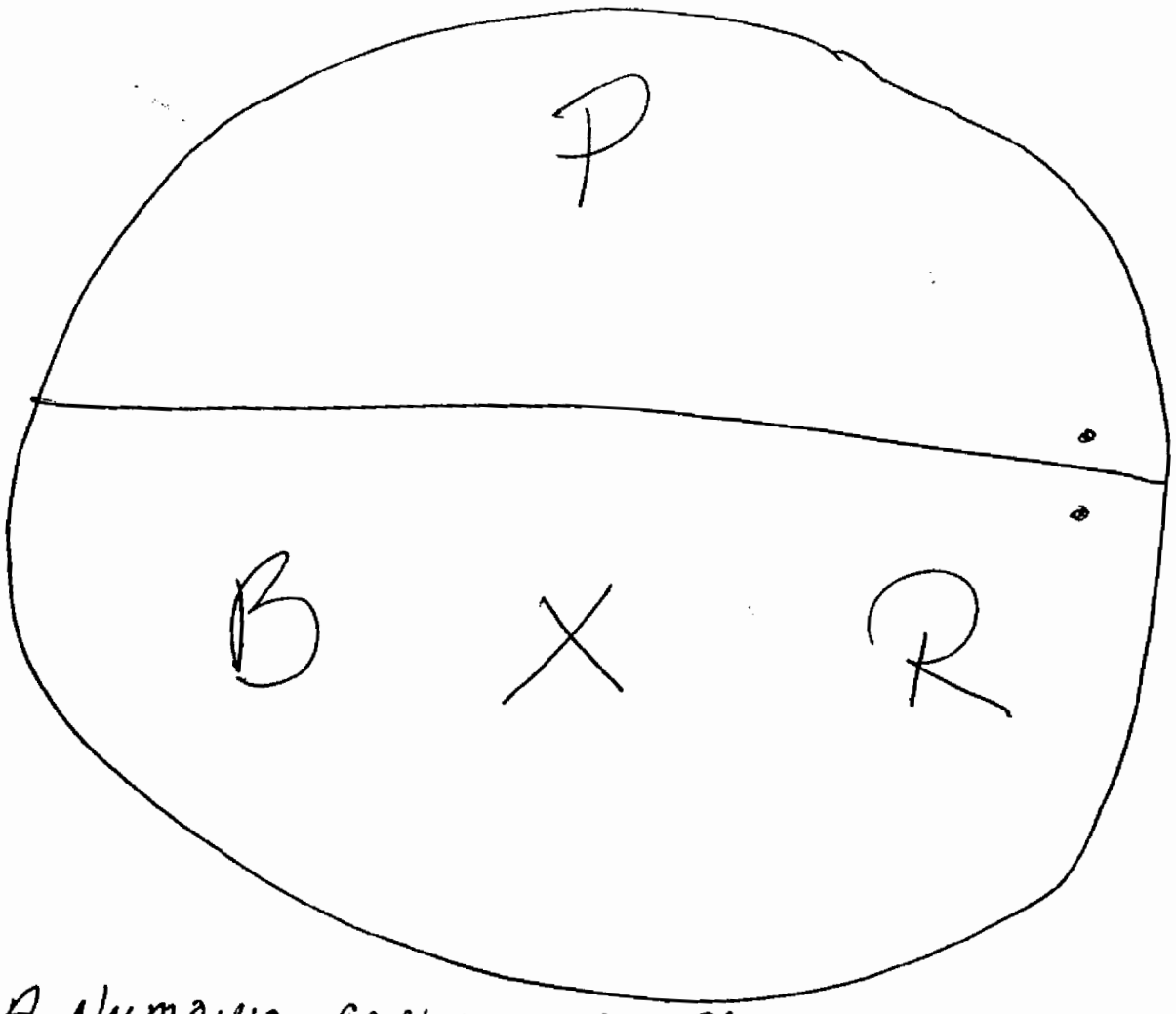
MEMORY DEVICE IN MATH.... A NUMONIC ~ MNEMONIC

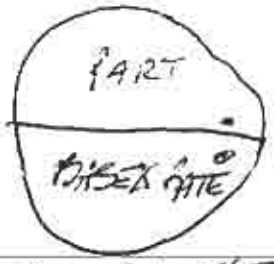


A NUMONIC CONTAINS 3 PIECES:
THE PART, THE BASE & THE RATE.
THE MIDDLE LINE IS THE DIVIDING LINE

BASE = (WHOLE,) VALUE, PRICE, PRINCIPAL, TOTAL INVESTMENT, ASSESSED VALUE, AMOUNT OF INSURANCE.

PART - RELATIVE TO THE BASE (WHOLE) EX: COMMISSION, PROFIT, (LOSS) NET INCOME PER YEAR, INTEREST PER YEAR, ANNUAL TAXES, NOTE: ALWAYS CONVERT YOUR NUMBERS TO YEARLY + YOUR INCOME INTO NET YEARLY (AFTER EXPENSES).

RATE USUALLY EXPRESSED WITH A % PERCENT SIGN. EXAMPLE: RATE OF COMMISSION, % OF RETURN, % OF PROFIT, OR % OF LOSS. ALSO TAX RATE, INSURANCE RATE, RATE OF INTEREST, DEPRECIATION, COMMISSION RATE.



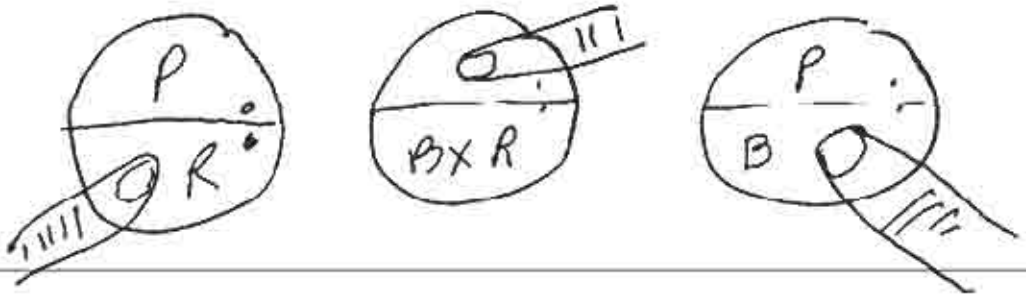
LOOKING AT YOUR NUMONIC TELLS YOU THE FOLLOWING IS TRUE:

PART - PART = BASE TIMES RATE

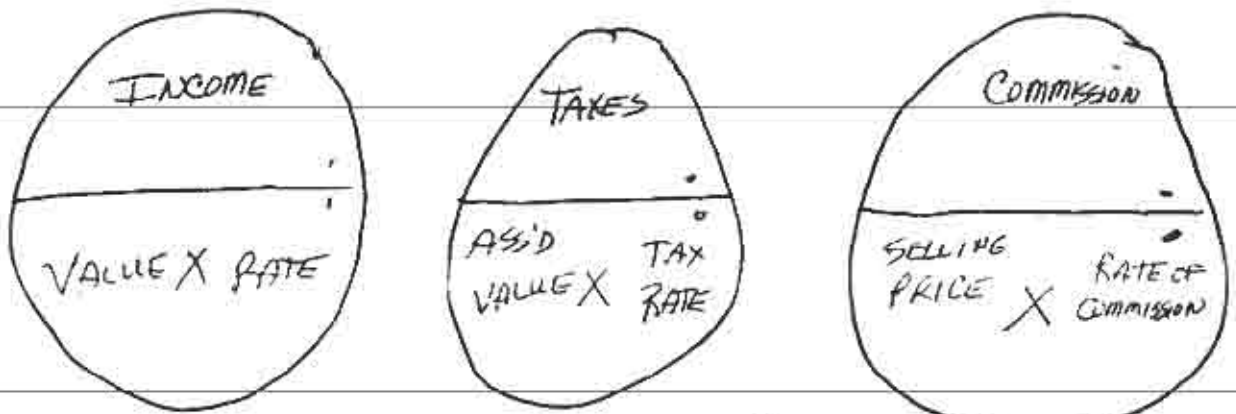
BASE - BASE = PART ÷ RATE

RATE - RATE = PART ÷ BASE

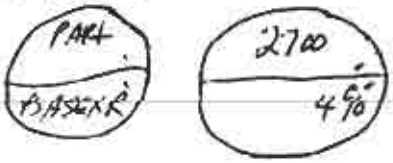
REMEMBER THEY ALWAYS GIVE YOU 2 OF THE ELEMENTS IN THE QUESTION. COVER THE MISSING PART AND THE NUMONIC TELLS YOU WHAT TO DO!



REMEMBER... THERE ARE MANY NUMONICS. THE ONE ABOVE IS THE BASIC NUMONIC. EXAMPLES:



QUES: IF YOU PAID A BANK $2700. FOR 4 POINTS, HOW MUCH DID YOU BORROW?
REMEMBER A POINT IS 1% OF THE LOAN AMOUNT.
ANOTHER NUMONIC:



REMEMBER THEY GIVE YOU 2 PIECES!
ITS EASY! 2700. ÷ 4% = 67,500 (WHAT YOU BORROWED)

Mathmatic Exercises

(6) You have $10,000 - invested at 8% interest per annum. How much interest is earned in 2 years 4 months?

(a) 1600. (B) 2400. (C) 1866.67 (D) 1366.47

Ans: 10,000 X 8% = 800 X 2 years = 1600.00
800 ÷ 12 = 66.67 per month X 4 = 266.67
TOTAL INTEREST 1866.67 (C)

(7) If you earned $2800. interest in 2 years at 7% - how much did you have invested?

(a) 10,000 (B) 15,000 (C) 20,000 (D) 22,000

Ans: $2800. ÷ 2 years = $1400 yearly. 1400 ÷ .07 = 20,000 (C)

(8) If you earned $6000. in interest per annum and had $75,000. invested, what rate per annum is your money invested?

(a) 5% (B) 6% (C) 9% (D) 8%

Ans: 6000. ÷ 75,000 = .08 so .08 = 8% (D)

(9) a house purchased 10 years ago for 60,000. now sells for $150,000. at what average annual rate has the value increased?

(a) 1.5 (B) 3% (C) 15% (D) 4%

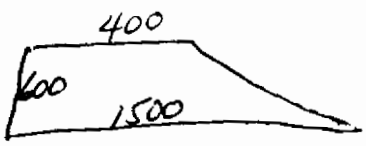
Ans: 150,000 - 60,000 = 90,000. 90,000 ÷ 60,000 = 1.50 or 150%
(Remember to change a decimal to a % we move 2 places right)
Then 150% ÷ 10 = 15% yearly (C)

(10) a salesperson got 20% of the commission on a sale of 175,000 @ 6%
How much did the salesperson get?

(a) 5250 (B) 4000 (C) 21000. (D) 2100

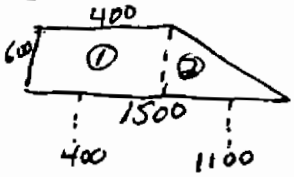
Ans $175,000 X 6% (=) 10,500 X 20% (=) 2100. (D)

(11) How many acres in the lot pictured here?



(a) 131 (B) 13.09 (C) 26.18 (D) 17

Ans



area 1 400 X 600 = 240,000
area 2 600 X 1100 X .5 = 330,000
TOTAL AREA 570,000 ÷ 43560 = 13.09 (B)

(TO CALCULATE A TRIANGLE You multiply The BASE X HEIGHT then divide IN $\frac{1}{2}$)

Mathmatic Exercises

1. How much fencing is needed to enclose a yard that is 25 feet long + 30 feet wide?

(a) 50 (b) 80 (c) 55 (d) 110

Ans. 25+25 = 50 plus 30+30 = 60 so 50+60 = 110 feet (D)

(2) How many gallons of paint are needed to paint a room which is 15 ft long by 12 feet wide by 8 feet high? A gallon covers 80 square feet.

(a) 8 (b) 3 (c) 4.5 (d) 5.4 (e) 7

Ans: 2 walls 12 X 8 = 192 Sq ft.
2 walls 15 X 8 = 240 Sq ft
432 Sq ft total ÷ 80 = 5.4 gallons (D)

(3) How many cubic yards of dirt would it take to fill a hole 4 feet wide by 8 feet long by 6 feet deep? One yard = 3 Feet and one cubic yard equals 27 cubic feet - (3 X 3 X 3 = 27)

(a) 9 (b) 18 (c) 27 (d) 7.11

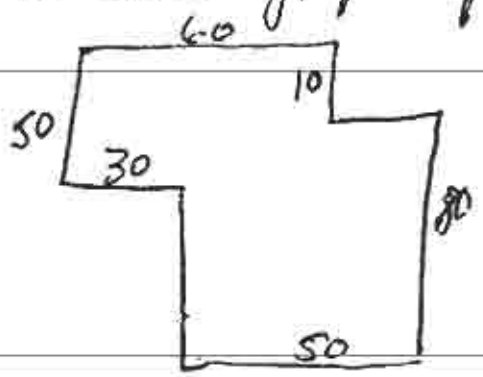
Ans 4 X 8 X 6 = 192 Cubic Feet (L X W X H) a cubic yard is 27 cubic feet so 192 ÷ 27 = 7.11 (D)

(4) How many acres in a lot 300' X 600'? There are 43,560 square feet in an acre.

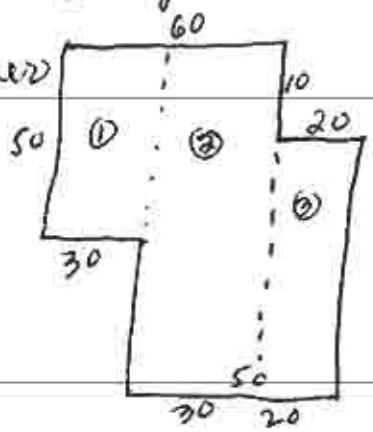
(a) 360 (b) 180 (c) 41.3 (d) 4.13

Ans 300' X 600' = 180,000 SQ FT. 180,000 ÷ 43,560 = 4.13 (D)

(5) How many square feet in the diagram?



Answer



area 1 - 30 X 50 = 1500 SF
area 2 - 30 X 80 2700 SF
area 3 - 20 X 80 1600 SF
5800 SF

Income & investments questions

(1) a property valued at ₦120,000 is earning an 8% return. What is the monthly return?

(A) 9600. (B) 4800. (C) 800. (D) 80.00

Ans: 120,000. × 8% = 9600. ÷ 12 = 800. (C)

(2) a property valued at ₦150,000. earns 750. per month. What is the annual percentage return.

(A) 7.5% (B) 6% (C) 9% (D) 12%

Ans: 750 × 12 = 9000. ÷ 150,000 = 6% (B)

(3) A business shows a monthly profit of ₦1050. This is a 9% return. what is the value of the business?

(A) 140,000. (B) 94,500 (C) 14,000 (D) 9,450.

Ans: 1050 × 12 = 12,600 ÷ 9% (=) ₦140,000. (A)

(4) what is the rate of return on an investments when annual net income is ₦3430. and property value is ₦22,000.?

(A) 1.56% (B) 6.4% (C) 15.6% (D). 156%

Ans: 3430. ÷ 22,000. = 0.155909 to convert − 0.155909 − 15.59 = 15.6 (C)

appreciation / Depreciation.

(5) a 5 year old house depreciates 6% annually. If it was worth 66,500 when it was built how much is the value today?

(A) 46,550 (B) 51,154 (C) 86,450 (D) 95,000 Ans: 66,500 − 30% = 46,550 (A)

(6) a building was purchased for ₦225,000 eight years ago. If the depreciation averaged 4.5% yearly, what is its present value?

Ans: 8 × 4.5% (=) 36%. So 225,000 − 36% = ₦144,000.

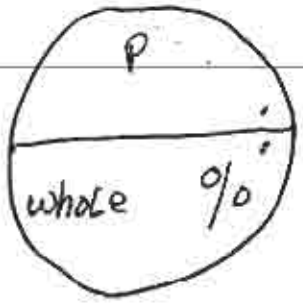
(A) 81,000 (B) 144,000. (C) 166,500 (D) 351,563. Ans (B)

(7) a home recently appraised for ₦105,000. which represents a 30% depreciated value. What was the original cost.?

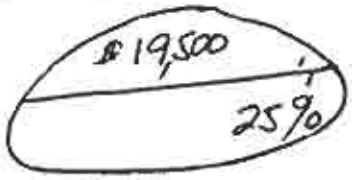
100% − 30% = 70%. ₦105,000 ÷ 70% (=) 150,000. (D)

(A) 80,769. (B) 136,500 (C) 139,650 (D) 150,000

Bertha had $19,500 for a down payment & must make a 25% down payment. How much can she spend for a home? Remember to draw your mnemonic!



They are asking for the "whole" As always they are giving you 2 elements in the question. The best is simple



Answer: $19,500 ÷ 25% (=) $78,000.

SOLVING DEPRECIATION (LOSS) PROBLEMS:

ALWAYS START WITH 100%!

QUES: JOE BROWN SOLD HIS PROPERTY FOR $90,000. THIS WAS A 20% LOSS FROM HIS ORIGINAL COST. WHAT DID HE ORIGINALLY PAY FOR THE PROPERTY?

100% - ALWAYS START WITH 100%
−20% - THE QUESTION IS ASKING ABOUT A LOSS SO YOU SUBTRACT
80% THEN DO THE MATH - 90,000 ÷ 80% (=) $112,500

SOLVING APPRECIATION PROFIT PROBLEMS:

ALWAYS START WITH 100%!

QUES: JOE BROWN SOLD HIS PROPERTY FOR $90,000 THIS WAS A 20% GAIN FROM HIS ORIGINAL COST. WHAT DID HE ORIGINALLY PAY FOR THE PROPERTY?

100% - REMEMBER - ALWAYS START WITH 100%!
+20% - THE QUESTION IS ASKING ABOUT A GAIN SO YOU ADD
120% THEN DO THE MATH - 90,000 ÷ 120% (=) $75,000.

HE ORIGINALLY PAID $75,000.

THE KEY TO MATH IS REPETITION! USING THE TWO QUESTIONS ABOVE, CHANGE THE NUMBERS AND PERCENTAGES AND KEEP DOING OVER & OVER FOR PRACTICE.

Chapter 22 Cont'd. AREA + VOLUME

(1) TO COMPUTE THE AREA OF A SQUARE OR RECTANGLE USE THIS FORMULA.

WIDTH X LENGTH = AREA

QUES: WHAT IS THE AREA OF A LOT 100 FEET WIDE X 200 FEET DEEP

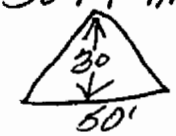
The FRONT NUMBER IS ALWAYS GIVEN FIRST. the AREA IS ALWAYS EXPRESSED IN SQUARE FEET. So W X L = AREA

$100' \times 200' = 20,000$ SQUARE FEET

(2) TO COMPUTE THE AREA OF A TRIANGLE △ use this FORMULA

AREA = BASE X HEIGHT ÷ 2

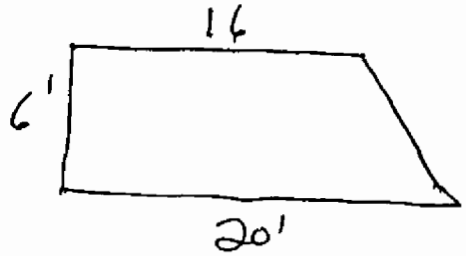
QUES: A TRIANGLES BASE IS 50 Ft AND ITS HEIGHT 1S 30F. WHAT IS ITS AREA?



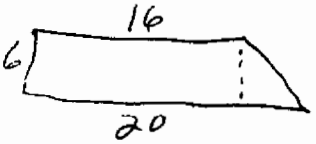
BASE HEIGHT

$50' \times 30' = 1500 \div 2 = 750$ the AREA IS 750 Ft

(3) COMPUTE THE AREA OF THE FOLLOWING: (A TRAPEZOID)



FIRST STEP IS TO MAKE A RECTANGLE AND A TRIANGLE OF THE SKETCH BY DRAWING A LINE THRU THE FIGURE



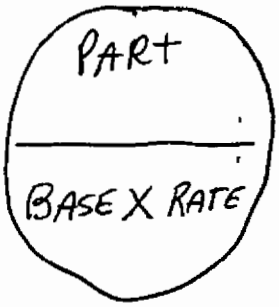
YOU NOW HAVE A SQUARE (RECTANGLE) AND A TRIANGLE. FOLLOW STEPS 1 + 2 ABOVE

$16 \times 6 = 96$ Sq Ft (The RECTANGLE)

$4 \times 6 = 24 \div 2 = 12$

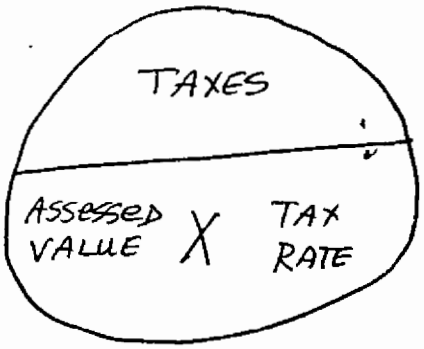
$96 + 12 = 108$ SQUARE FT IS THE TOTAL AREA

Property Taxes, Transfer Taxes + insurance premiums are usually expressed as rates. The formula for computing rates is usually at a rate per unit. For example Tax might be computed as a rate of $5.00 per $100. per assessed value. So the mnemonic would be



THE ORIGINAL MNEMONIC

FOR TAX QUESTIONS THE MNEMONIC WOULD BE:



QUES: A HOUSE HAS BEEN ASSESSED AT $90,000. THE TAX RATE IS $2.50 PER $100. ASSESSED VALUE. WHAT IS THE YEARLY TAX?

ANSWER: SINCE THE TAX RATE IS EXPRESSED IN 100's (PER $100.) IN THE QUESTION YOU NEED TO FIND OUT HOW MANY INCREMENTS OF 100 THERE ARE IN $90,000. SO 90,000. ÷ 100 = 900

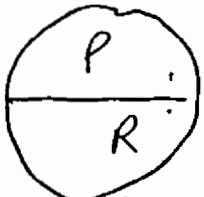
YOU HAVE 900 INCREMENTS OF 100, AND THE REST IS EASY!

900 X 2.50 = $2250. TAXES

REVIEW OF THE BASIC MNEMONIC:

WHEN FIGURING OUT WHAT TO PUT IN THE CIRCLE REMEMBER IT IS ALWAYS EASIEST TO DETERMINE THE <u>RATE</u>. IT IS ALWAYS A PERCENTAGE. ONCE THIS IS DONE DECIDE WHETHER THE MISSING NUMBER IS GOING TO BE THE SMALLER (PART) OR LARGER (BASE) OF THE TWO NUMBERS. IF IT IS <u>BIGGER</u> IT GOES ON THE <u>BOTTOM</u> IF IT IS SMALLER IT GOES <u>ON TOP</u>. YOUR MNEMONIC TELLS YOU WHAT TO DO.

BASE X RATE EQUALS PART



PART ÷ RATE EQUALS BASE

PART ÷ BASE EQUALS RATE

PRACTICE OVER + OVER

Taxes - Ad Valorem = According to Value.

(1) The taxes on a home assessed at $150,000. is at a rate of 2.50 per hundred dollars valuation. What are the yearly taxes?

(a) 37,500 (B) 375.00 (C) 1500. (D) 3750.

Ans: the question asks per hundred. So divide the 150,000 by 100. Then multiply by the rate of 2.50 —

150,000 ÷ 100 = 1500 × 2.50 = 3750. (D)

(2) The tax assessment ratio (or equilization factor) for a house valued at $90,000 is 40%. If the tax rate is 3.50 per 1000. what is the quarterly tax?

(a) 31.50 (B) 126.00 (C) 63.00 (D) 42.00

Ans: 90,000 × 40% (=) $36,000 = 126.00 ÷ 4 = 31.50 (A)

(3) a property is assessed at 60% of its property value of $88000 if the tax rate is 3.12 per $100. What is the monthly property tax.

(a) 228.80 (B) 93.28 (C) 114.40 (D) 137.28

Ans: $88,000 × 60% = 52,800 ÷ 100 = 528 × 3.12 = 1647.36 ÷ 12 = 137.28 (D)

(4) a property is assessed at 40% of its market value of $46000. The tax rate is 5.88 per 100. of value. What is the monthly tax?

(a) 90.16 (B) 135.24 (C) 225.40 (D) 1081.92

Ans: 46,000 × 40% = 18,900 ÷ 100 = 184 × 5.88 = 1081.92 ÷ 12 = 90.16 (A)

(5) a property is valued at $78,500. The tax rate is 4.63 per 100. What are the semi annual tax payments?

(a) 408.63 (B) 654.17 (C) 363.00 (D) 1817.28

Ans: 78,500 ÷ 100 = 785 × 4.63 = 3634.55 ÷ 2 = 1817.28 (D)

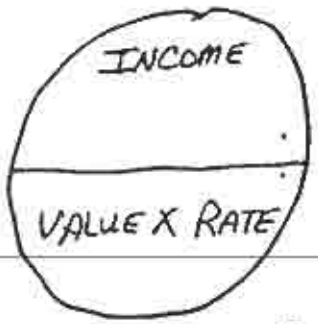
QUES A HOME WAS PURCHASED A YEAR AGO FOR 98,500. PROPERTY IN THE AREA IS DECREASING AT A 5% ANNUAL RATE. WHAT IS THE CURRENT VALUE OF THE HOME?

ANS: THE BASE IS 98,500. BUT THE RATE IS ONLY 95%! REMEMBER YOU ~~START~~ WITH 100% AND IF ITS A LOSS (NOTE DECREASE IN THE QUESTION) YOU SUBTRACT THE LOSS FROM 100% TO GET 95%. NOW YOU CAN USE YOUR NUMONIC

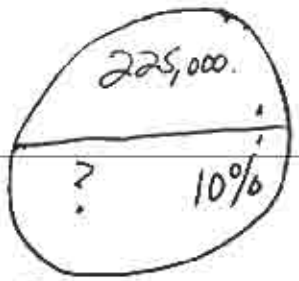
SO: $98,500 \times 95\% = \$93,575$ IS THE ANSWER

TO FIGURE THE VALUE OF INVESTMENT PROPERTY YOU CONVERT THE PRESENT INCOME INTO VALUE. THIS IS KNOWN AS <u>CAPITALIZATION</u>

THE FORMULA (NUMONIC) IS THIS:



QUES: AN INVESTOR WANTS TO MAKE AN OFFER ON AN APARTMENT BUILDING WHOSE NET ANNUAL INCOME IS $225,000. SHE INSISTS ON A RATE OF RETURN (CAPITALIZATION RATE) OF 10%. WHAT IS THE MOST SHE WOULD PAY FOR THE PROPERTY? REMEMBER THEY ALWAYS GIVE YOU 2 OF THE ELEMENTS, SO THE REST IS EASY!



$225,000. ÷ 10% (=) $2,250,000.

SHE WOULD PAY $2,250,000.

REMEMBER THE INCOME MUST ALWAYS BE <u>NET</u> (AFTER EXPENSES ARE DEDUCTED) AND ANNUAL (YEARLY) FOR THE FORMULA TO WORK.

PRORATIONS + CLOSING STATEMENTS

DEBIT CREDIT - A PLUS

① ANNUAL TAXES ARE $2560.00. THE CLOSING IS MAY 15, THE SELLER PAID THE TAXES THRU JULY. THEREFORE THE TAXES ARE PREPAID FOR 75 DAYS - 15 IN MAY 30 JUNE, 30 JULY = 75 DAYS. SINCE THE SELLER HAS PAID THEM HE GETS A CREDIT. $2560 ÷ 360 DAYS = 7.11 PER DAY TIMES 75 DAYS = 533.25. CREDIT SELLER + DEBIT BUYER BECAUSE HE IS GETTING THE HOUSE WITH THE TAXES PAID!

② HAZARD INSURANCE: 3 YEAR PREMIUM IS $432.00 PAID TO 3/15/99 CLOSING MAY 15, 1997. So 3 years = 360 days x 3 years = 1080 days. So $432.00 ÷ 1080 days = .40¢ per day. Unused Period is 22 months x 30 days per month is 660 days x 40¢ PER DAY = $264.00. So CREDIT SELLER BECAUSE HE PAID THE INSURANCE AHEAD OF TIME AND WILL NOT BE LIVING IN THE HOME + DEBIT (CHARGE) BUYER $264.00 - BECAUSE HE IS GETTING THE HOUSE WITH THE INSURANCE PAID. (MAY 15, 1997 TO MARCH 15, 1999 IS 22 MONTHS).

③ INTEREST TO BE PAID IN ADVANCE TO LENDER. THE MORTGAGEE REQUIRES INTEREST TO BE PAID THROUGH THE MONTH OF THE CLOSING. SO A $129,500. LOAN AT 9% PER ANNUM IS OBTAINED. THE CLOSING IS ON MAY 15TH AND THE INTEREST HAS TO BE PAID TO MAY 30. HOW MUCH DOES THE MORTGAGEE GET + WHO PAYS FOR WHAT?

ANS: $129,500. x 9% = $11,655 FIRST YEARS INTEREST ÷ 360 DAYS = $11,655 ÷ 360 = $32.38 PER DAY IN INTEREST CHARGES. MAY 15 TO MAY 30 = 15 DAYS x $32.38 = $485.70. CHARGE BUYER (BORROWER), ONLY. NOTHING TO SELLER. ITS A BUYERS EXPENSE!

NOTES: SELLING PRICE IS A DEBIT TO BUYER + A CREDIT TO SELLER.
EARNEST MONEY DEPOSIT IS A CREDIT TO THE BUYER.
SURVEY - CHARGE (DEBIT) BUYER. ITS HIS EXPENSE.
NEW FIRST MORTGAGE - CREDIT BUYER
TITLE INSURANCE - DEBIT BUYER - ITS FOR HIS BENEFIT.
RECORDING DOCUMENTS - DEBIT BUYER - ITS FOR HIS PROTECTION.
EXISTING MORTGAGE TO BE PAID - DEBIT SELLER ONLY.
COMMISSION - DEBIT SELLER
TAXES - IF PAID AHEAD - CREDIT SELLER, DEBIT BUYER FOR UNUSED PORTION.
DISCOUNT POINTS + TITLE SEARCH - DEBIT BUYER ONLY.

Commission Problems

(1) A Seller wants to clear $200,000. She is willing to pay a 6% Commission. What should the house sell for?

(a) $200,000 (B) 210,000. (C) 212,000 (D) 212,765.95

Ans: The house + Commission total 100% of the Transaction. The Commission is 6%. Therefore the house is 94%!

So: 200,000 ÷ 94% = 212,765.95 (D)

(2) The commission on a home that sells for $96,000 was $4800. What was the rate of Commission?

(a) 104,800. (B) 50% (C) 5% (D) 20%

Ans: 4800 / 96000 = x 4800 ÷ 96000. = .05% (C)

(3) A home sold for $78,000 @ 6% Commission. The salesperson got 40%. How much did the broker get?

(a) 40,000 (B) 2808. (C) 1872.00 (D) 4680.

Ans: $78000 × 6% = 4680 × 60% = $2808 (B)

(4) A Broker gets 6% of the first $100,000 and 3% on any amount over $100,000. What would the loss to the broker be if a home listed for $180,000 had to be reduced by 20%

(a) 8400. (B) 7320. (C) 15,720 (D) 1080.

Ans: $180,000 − 20% = $144,000. So 180,000 − 144,000. = 36,000 × 3% = $1080 (D)

(5) A seller wants to clear $100,000. She is willing to pay a 5% Commission. What should the home sell for?

(a) 105,000 (B) 105,263 (C) 110,000 (D) 95,000

Ans. 100,000 ÷ 95% = $105,263 (B)

Mortgages & points. Remember a point is 1% of the loan.

(1) A borrower paid $2800 for 4 points. How much did he borrow?

(A) 11,200 (B) 26,880 (C) 112,000. (D) 70,000

Ans: $2800 ÷ 4% = 70,000. (D)

(2) A seller agreed to pay 60% of the buyers points. If the buyer borrowed 120,000 with 3½ points, how much did the seller pay for points.

(A) 7200 (B) 2520 (C) 4200. (D) 1680

Ans: 120,000 × 3.5% = 4200 × 60% = 2520 (B)

(3) A buyer who was a veteran using his VA entitlement agreed to buy a home for $120,000 with 10% and the balance as a first mortgage with 2 points, how much did he pay for points.

(A) 2160. (B) 2400. (C) 216.00 (D) 2400.00 (E) 0

Note (X) VA is no Down! 120,000 × 2% = 2400. (D)

(4) On an FHA loan the buyer was putting 25% down on a $300,000 home. How much will the FHA lend him?

(A) 225,000 (B) 275,000 · (C) 250,000 (D) 0

Note (X) FHA Does not lend money - it only insures loans! (D)

(5) A buyer was putting 20% down on a $200,000 home He applied for a 180,000 mortgage. The banks LTV Loan to Value ratio was 80%. The home appraised for 210,000. Now how much will the bank loan him?

(A) 168,000 (B) 160,000 (C) 205,000 (D) 150,000

Ans: (B) 160,000. The bank uses the lower of the appraisal or the contract Price!

Lease Problems

(1) M.C. has signed a percentage lease with terms of 500 per month base rent plus 9% annually of gross sales over $250,000. If at the end of the year the gross sales were a million dollars, what is the additional rent he still owes?

(A) 67,500 (B) 6000 (C) 73,500 (D) 75,000

Ans 1,000,000 minus 250,000 = 750,000 × 9% = 67,500 (A)

(2) Commercial space is rented for .07 per square foot per month. What is the Annual rent on space of 80' × 150'

(A) 12,000 (B) 1932 (C) 10,080 (D) 8400

Ans: 80 × 150 = 12 000 SF × .07 = 840. per month × 12 = $10,080. (C)

(3) An office Bldg is 30' × 70' and rents for 11.50 per year per square foot. What is the rent for one month?

(A) 958.33 (B) 2100. (C) 2415. (D) 2012

Ans: 30 × 70 = 2100 SqFt × 11.50 = 24,150 year ÷ 12 months = 2012. (D)

(4) A commercial lease has a base rent of 425 per month plus 2% of gross sales over $200,000. If the total rent was 9700 for the year, what was the total amount of gross sales for the year?

(A) 510,000 (B) 460,000 (C) 430,000 (D) 230,000

Ans: 425 × 12 = 5100. 9700 − 5100 = 4600 ÷ 2% = 230,000 + 200,000 = 430,000 (C)

(5) A store in a mall leased for $200. a month base rent plus 1½% of gross sales over $50,000. If the total yearly rent was $3450. what were the total gross sales for the year?

(A) 70,000 (B) 120,000 (C) 160,000 (D) 200,000

Ans: 200. × 12 = 2400. 3450 − 2400 = 1050 ÷ 1.5% = 70,000 + 50,000 = 120,000 (B)

(6) A commercial space leases for $5.50 per square foot. The first floor is 60 × 100 and the second floor is 48 × 100. What is the annual rent?

(A) 59,400 (B) 4950 (C) 49,500 (D) 64,900

Ans: 60 × 100 = 6000 Square feet Ans:
48 × 100 = 4800 Square feet.
Total SF. 10,800
× 5.50 per SF × 5.50
$59,400 answer (A)

Commission Questions

(1) If a seller wants to get $200,000. clear for his house & will pay 6% Commission, How much does it have to sell for?

$$\begin{array}{r} 100\% \\ -\ 6\% \\ \hline 94\% \end{array} \qquad 200{,}000. \div 94\% = \$212{,}765.95$$

(2) If a seller wants to clear $200,000 for his home & will pay 5% Commission, how much does it have to sell for?

$$\begin{array}{r} 100\% \\ -\ 5\% \\ \hline 95\% \end{array} \qquad \$200{,}000 \div 95\% = \$210{,}526.31$$

(3) If a seller wants to clear $200,000 for his home & will pay 4% Commission, how much does it have to sell for?

$$\begin{array}{r} 100\% \\ -\ 4\% \\ \hline 96\% \end{array} \qquad \$200{,}000 \div 96\% = \$208{,}333.33$$

* Remember to always start with 100% and subtract the Commission rate he will pay. Then divide that into what he wants to clear.

CALCULATE THE POINTS - A POINT IS 1% OF LOAN AMOUNT.

Sales Price	Mortgage amount	Points	$ amount of points
$400,000.00	$350,000.00	5	$17,500.
75,000.00	$ 50,000.00	3	$1,500.00
135,50000	$ 125,000.00	2	$2,500.00
179,500.00	$ 179,000.00	1	$1790.00
22,000.00	$ 18,000.00	4	$ 720.00

CALCULATE THE COMMISSION!

7% of $50,000.00	$ 3500.00
8½% of 235,000.00	$ 19,975.00
6% of 114,450.00	$ 6867.00
3% of 100,139.00	$ 3004.17
5% of 595,000.00	$ 29,750.00

CONVERT: (A MILL IS ONE THOUSANDTH $\frac{1}{1000}$ OF A DOLLAR).

MILLS TO DECIMALS

29	.029
97	.097
16	.016
11	.011
10	.010
5	.005
76	.076
33	.033
2	.002

(DIVIDE BY 1000)

DECIMALS TO MILLS

.002	2
.14	140
.36	360
.667	667
.125	125
.11	110
.02	20
.40	400

(MOVE 3 PLACES TO THE RIGHT).

Prorations - used on a RESPA ... per month, 360 days a year.

(1) Alan Tofi is buying a four family & closing Feb 16 of a leap year. Each Unit rents for $680.00 with Unit 3 vacant as of Feb 1st. How much will be credited to buyer at Closing?

Ans: Feb 1 ——— 16 ——— 29 (16 days to seller) 29 − 16 = 13 Days to buyer

680. X 3 = $2040. Collected, $2040 ÷ 29 Days = $70.34 per day - so the buyer gets 13 days X 70.34 = $914.48 Due To Buyer

(2) Prorate the insurance premium for a policy bought on oct 16 for $450. a year. Closing will be aug 20. All prorations are to be made to the day of closing according to the Contract.

Ans: $450 ÷ 360 days = 1.25 per day cost of insurance. Credit Seller because he paid the insurance; Aug 10 Days, Sept 30 days, oct 16 days = 56 Credit Seller 56 days X 1.25 = 70.00 Credit Seller & Charge buyer.

(3) RE Taxes on the Johnsons home was $3600 per year. Closing is on July 15th. The Johnsons did not pay their RE Taxes — Do the proration.

Ans: 3600. ÷ 360 days = $10. per day. Jan-June = 6 mos X 30 = 180 days plus 15 days in July = 195 Days. Charge Johnsons $1950. Credit buyers 1950. because they are going to have to pay the taxes.

(4) Earnest Money is:
(A) Credit to seller only (C) Credit buyer only
(B) Credit Seller debit Buyer (D) credit buyer, debit seller Ans (C)

(5) Taxes Prorated when taxes are "Paid in Arrears" - (means taxes Not Paid)
(A) Debit seller only (C) Credit Seller, Debit Buyer
(B) Debit seller, Credit Tax Collector (D) Credit Buyer, Debit Seller (D)

(6) Loan balance being assumed. As in a Mortgage assumption.
(A) credit Buyer, Debit Seller (C) Debit Buyer
(B) Debit Buyer, Credit Seller (D) Credit to buyer only Ans (A)

Note (X) Paid in arrears means not Paid at all!
Accrued - Also means not Paid yet.
New mortgage - Credit to buyer only
Assumption of Mortgage - Debit Seller, Credit Buyer.

FINANCE MA:

① ON A SIMPLE INTEREST LOAN OF $1050.00 WHAT WOULD BE THE TOTAL INTEREST PAYMENT FOR 3 YEARS, 10 months 20 DAYS. INTEREST RATE IS 12% PER ANNUM. USE 30 DAY months when computing THE INTEREST.
(A) 490. (B) 483. (C) 105. (D) 395
Ans $1050 X 12% = $126.00 PER YEAR INTEREST. So 3 YEARS WOULD BE $126. X 3 = 378.00, Then $126. per year ÷ 12 months = 10.50 per month X 10 months 105.00 Then 126. year ÷ 360 DAYS = .35¢ PER DAY X 20 DAYS = 7.00
$490.00 TOTAL INTEREST (A)

② MONTHLY PAYMENTS ARE $850.00 ON A $60,000. LOAN. THE PAYMENTS INCLUDE PRINCIPAL + INTEREST. IF THE RATE IS 11½% PER ANNUM, WHAT IS THE BALANCE AFTER THE 1ST Months Payment?
(A) 54,150 (B) 59,425 (C) 59,550 (D) 59,725
Ans: $60,000 X 11.5% = 6900 ÷ 12 months = 575. 1st months Interest.
PAYMENT IS 850.00
MINUS INTEREST 575.00 FOR 1ST MONTH.
$275.00 COMES OFF LOAN – SO SUBTRACT:

So $60,000.00
− 275.00
$59,725.00 BAL AFTER 1ST Months PAYMENT (D)

③ A PERSON BORROWS $9000. AT 15% TO IMPROVE HIS STORE. IF HE PAYS OFF THE LOAN AT THE END OF EIGHT months IN ONE PAYMENT, How much DID HE PAY?
(A) 10,350 (B) 9900 (C) 1350 (D) 900.
Ans: 9000. X 15% = 1350 INTEREST FOR THE YEAR. THE QUESTION ASKS FOR 8 months, SO DIVIDE THE 1350. BY 12 months = 1350 ÷ 12 = 112.50 per month X 8 months = $900.00 IN INTEREST PLUS THE $9000. HE BORROWED: SO ADD –
$9000.00 Amount BORROWED
900.00 INTEREST FOR 8 months
$9900.00 ANSWER (B)

FINANCE MATH

THE LENDERS LOAN PRICING SCHEDULE IS AS FOLLOWS:

① 25 YEARS @ 8% = $8.40 PER $1000. BORROWED/MONTHLY
30 YEARS @ 9% = 8.05 PER 1000. BORROWED/MONTHLY
35 YEARS @ 9.5% = 8.22 PER 1000. BORROWED/MONTHLY

BASED ON THE ABOVE INFORMATION, HOW MUCH MORE ARE THE MONTHLY PAYMENTS ON A HOME SOLD FOR $40,000 AND FINANCED FOR 25YRS THAN FOR 30 YEARS?

(A) 241.50 (B) 252.00 (C) 10.50 (D) 1400

ANS: 40000. X 75% = 30,000 BORROWED - SO:

30 X 8.40 = $252.00 PER MONTH
30 X 8.05 = 241.50 PER MONTH
$10.50 DIFFERENCE PER MONTH (C)

② A BORROWER OBTAINS A 15 MONTH TERM LOAN FOR $8400. THE ANNUAL INTEREST RATE IS 11% AND ACCRUED INTEREST IS PAID QUARTERLY. A BALLOON PAYMENT WILL RETIRE THE PRINCIPAL. WHAT IS THE TOTAL AMOUNT OF ALL PAYMENTS?

(A) 1,155 (B) 8631 (C) 9324 (D) 9555.

ANS; 8400. X 11% = 924 annually, so DIVIDE 924 BY 12 MONTHS TO GET $77.00 PER month. 77.00 X 15 MONTHS = 1155 INTEREST PLUS THE 8400. - THE ORIGINAL AMOUNT OF THE LOAN $8400 / $9555 answer (D)

③ THE PRESENT LOAN BALANCE IS EQUAL TO 6% OF ITS APPRAISED VALUE. IF THE PROPERTY IS ENCUMBERED BY A TERM NOTE WITH INTEREST OF 6% THAT CALLS FOR SEMI-ANNUAL INTEREST PAYMENT OF $360.00 WHAT IS THE APPRAISED VALUE OF THE PROPERTY?

(A) 10,000. (B) 20,000 (C) 21,600 (D) 60,000

ANS: 2 SEMI-ANNUAL PAYMENTS OF $360.00 = $720. IN YEARLY INTEREST. SO $720. ÷ 6% = 12,000. SO $12,000. ÷ 60% = $20,000. (B)

In a loss problem you subtract the % of the loss from 100%. Then divide the selling price by that percent.

Example:

A house sold for $125,000.00. This was a 25% loss. What did the owner pay for the house?

$$\begin{array}{r} 100\% \\ -\ 25\% \\ \hline 75\% \end{array} \qquad \$125{,}000. \div 75\% \qquad \$166{,}666.\text{ he paid}$$

In a profit or appreciation problem you add the % of Profit to 100% and then divide that % into the selling price.

Example:

A house sold for $125,000.00 This was a 25% profit (or gain). What did he originally pay for the house?

$$\begin{array}{r} 100\% \\ +\ 25\% \\ \hline 125\% \end{array} \qquad \$125{,}000 \div 125\% \qquad \$100{,}000\text{ he paid.}$$

Remember: You always start with 100%

HOW TO AMORTIZE (PAYOFF) A LOAN.

TO FIND THE MONTHLY PAYMENT, USE THE AMORTIZATION CHART. LOOK AT THE NUMBER OF YEARS AND THE RATE TO GET THE MONTHLY PAYMENT PER THOUSAND DOLLARS BORROWED. EXAMPLE AN 8% LOAN FOR 30 YEARS IS $7.34 PER MONTH FOR EACH THOUSAND DOLLARS BORROWED. (30 years @ 8% = 7.34) THEN MULTIPLY THE $7.34 BY THE LOAN AMOUNT SO A LOAN OF $120,000. × 7.34 = 880.80 per Month (PRIN+INT)

QUESTION: WHAT WOULD THE LOAN BALANCE BE AFTER THE FIRST PAYMENT WAS MADE ON A $120,000. LOAN AT 8% FOR 30 YEARS?

SOLUTION: MULTIPLY THE LOAN AMOUNT 120,000 BY THE RATE 8% TO GET THE YEARLY INTEREST. THEN DIVIDE BY 12 TO GET THE MONTHLY INTEREST

$120,000 × 8% = 9600. ÷ 12 = 800. THE 1ST MONTHS INTEREST.

WE KNOW THE PAYMENT IS 880.80 AND WE SUBTRACT THE FIRST MONTHS INTEREST WHICH IS −800.00 AND WE GET THE AMOUNT THAT COMES OFF THE LOAN BALANCE 80.80. THEN WE SUBTRACT THAT FROM THE LOAN BALANCE; 120,000. MINUS 80.80 TO GET THE BALANCE AFTER THE FIRST MONTHS PMT − 80.80

$ 119,919.20 IS THE LOAN BALANCE

2ND MONTHS PAYMENT.

119,919.20 × 8% = 9593.54 yearly INTEREST. DIVIDE BY 12 TO GET 799.46 the INTEREST FOR THE SECOND Month. Repeat THE SAME AS ABOVE. PAYMENT 880.80

−799.46

$ 81.34 COMES OFF THE

LOAN BAL 119,919.20

− 81.34

119837.86 LOAN BAL AFTER SECOND Month.

3RD MONTHS PMT

$119,837.86 × 8% = 9587.03 ÷ 12 = $798.92 INTEREST 3RD Month.

So: 880.80

−798.92

$ 81.88 COMES OFF LOAN BALANCE: $ 119,837.86

− 81.88

$ 119755.98 IS THE

LOAN BALANCE AFTER 3 PMTS.

(JUST KEEP REPEATING)