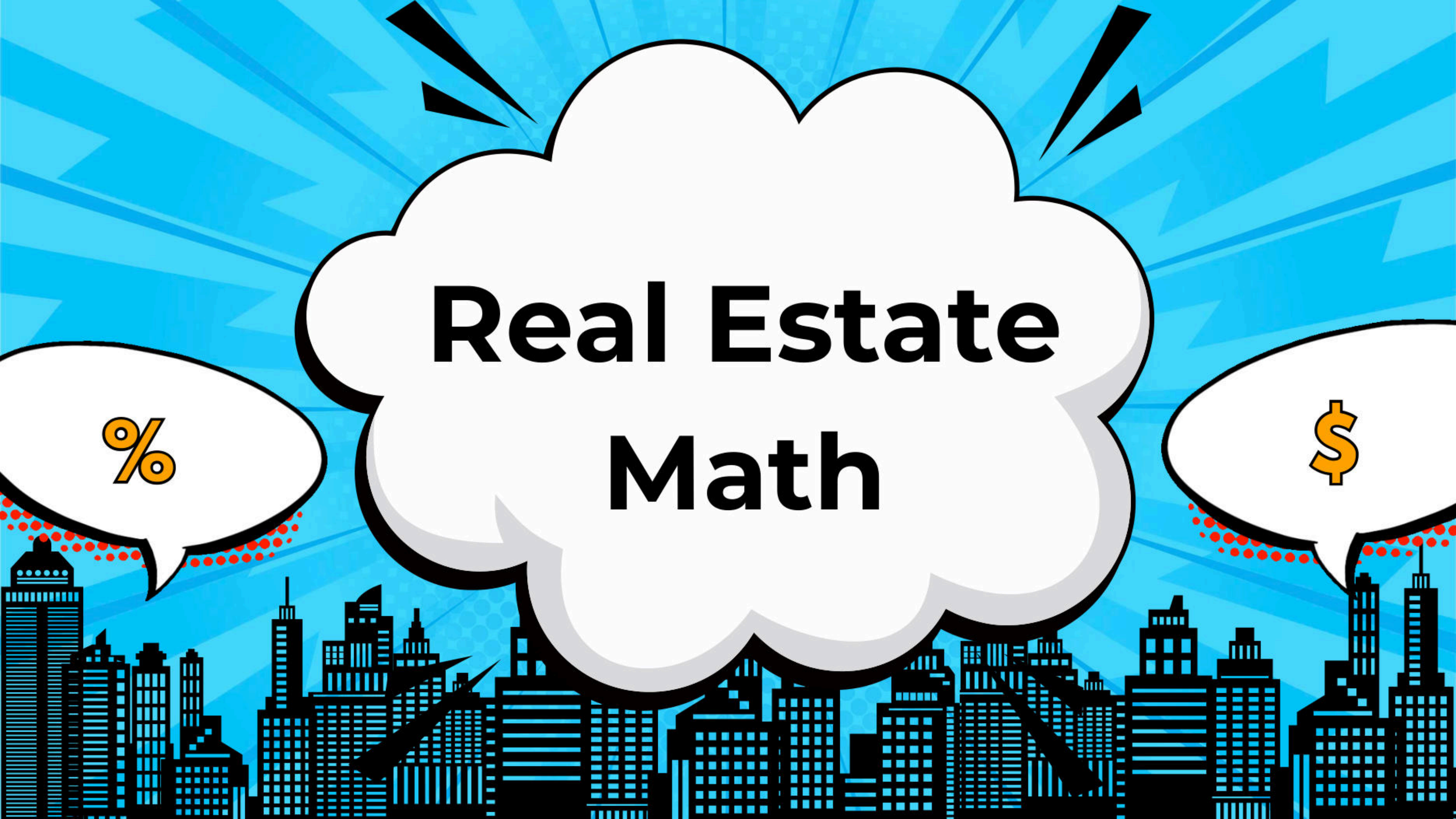
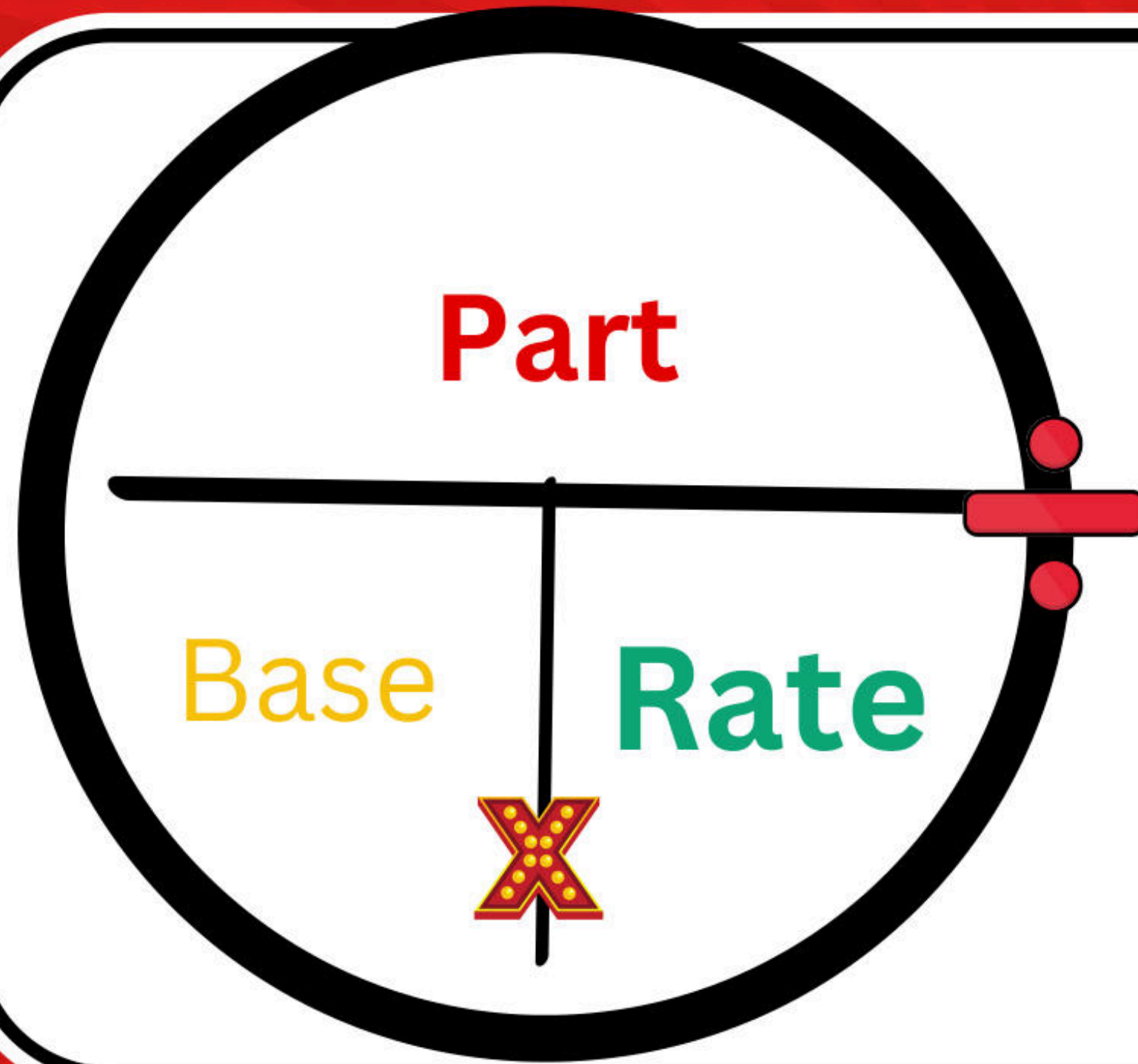


A graphic illustration featuring a large white cloud with a black outline in the center, containing the text "Real Estate Math". To the left of the cloud is a smaller white speech bubble with a black outline containing a yellow percentage symbol (%). To the right is another smaller white speech bubble with a black outline containing a yellow dollar sign (\$). The background is a vibrant blue with white and yellow diagonal stripes radiating from behind the central cloud. At the bottom of the image is a black silhouette of a city skyline with various skyscrapers. The entire graphic has a comic book or pop art style.

Real Estate Math

%

\$



Use the T method
Part is the smallest
Base is the biggest
Rate is %

Part

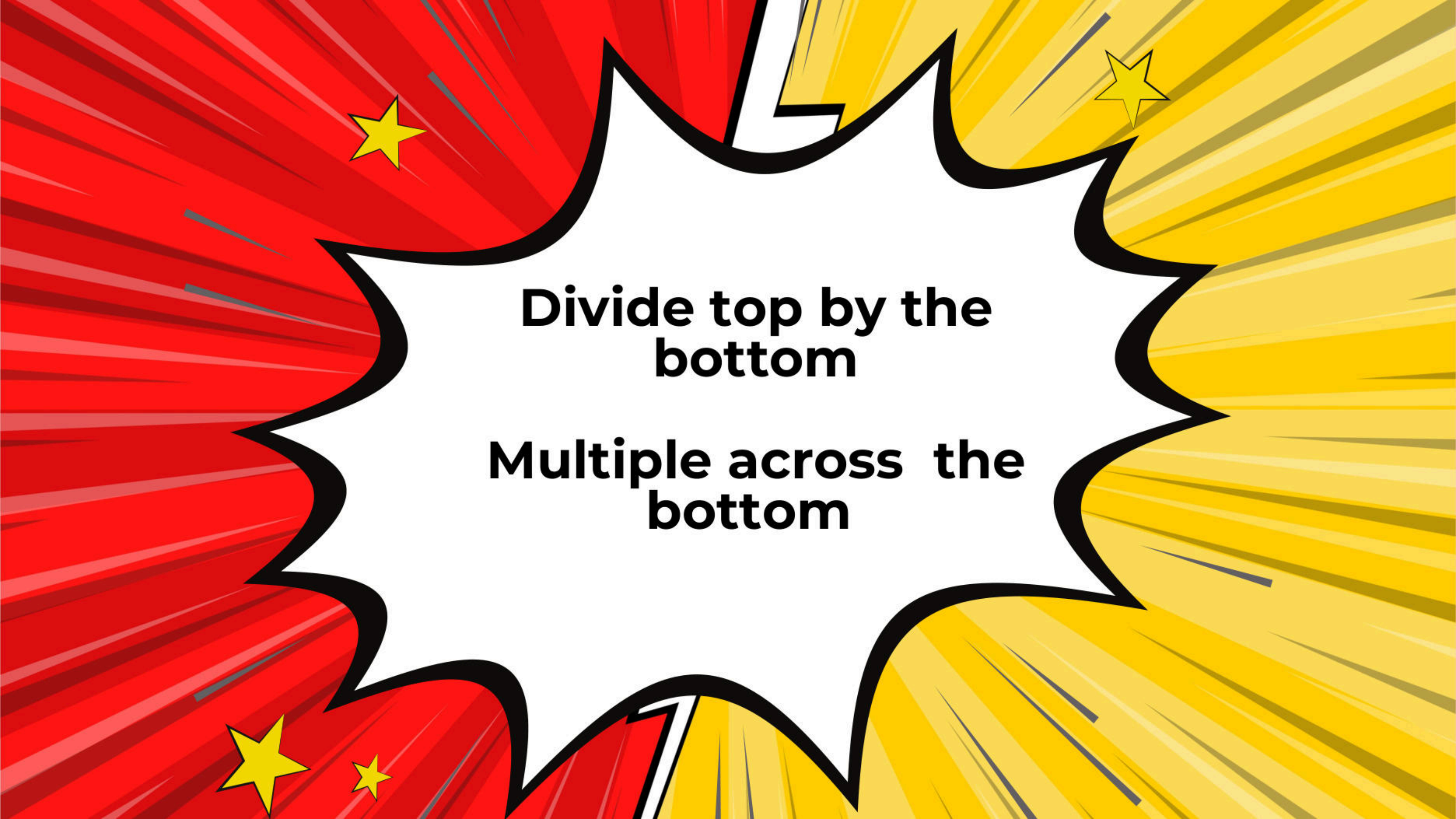
**Smallest
on top**

Base

**Largest
on
bottom**

Rate

**% or
actual
rate on
bottom**

The background features a central white area containing text, surrounded by large, jagged, comic-book-style shapes. The left side is filled with red shapes, and the right side is filled with yellow shapes. Both red and yellow shapes have thin, parallel lines radiating from their centers, creating a sense of motion or energy. There are four yellow stars: one in the upper left red area, one in the upper right yellow area, and two in the lower left red area.

**Divide top by the
bottom**

**Multiple across the
bottom**

Question #1:

A salesperson works on a 50/50 commission split with her broker. If she lists a house at \$146,000 for 6% commission and sells it for \$144,000, how much does the salesperson receive?



Answer 1

$$\text{\$144,000} \times .06 \text{ (6\%)} = \text{\$8640}$$

This is the total commission.

50/50 split

$$\text{\$8640} / 2 = \text{\$4320.00}$$

Question No. 2

The brokers Commission on the sale was \$14,100 which was 6% of the sale price. What was the sale price?

Answer 2

Step 1.

$$\$14,100 / 6\% = \$235,000$$

Question No. 3

Happy Valley Realty recently sold a home for \$79,500. The broker charged the sellers a 6 1/2% Commission and paid 30% of that amount to the listing salesperson and 25% to the selling salesperson.

What amount of Commission did the listing person receive from the sale of his home?

Answer 3

Step 1.

\$79,500 sale price x 6 1/2% commission =

\$79,500 x .065 = \$5,167.50 Happy

Valley's commission.

Now find the Listing Agent's side.

Answer 3

Step 2.

\$5,167.50 x 30% or 5,167.50 x .30=

\$1,550.25 Listing person

BONUS : Selling agent 25% = \$1,291.87

Make sure you label your work!!!

Question No. 4

A salesperson receives a monthly salary of \$500 + 3% Commission on all of his listings that sell and $2\frac{1}{2}\%$ on all of his sales.

None of the listings that the salesperson took sold last month, but he received \$3675 in salary and Commission. What is the value of the property sold buy this salesperson?

Answer 4

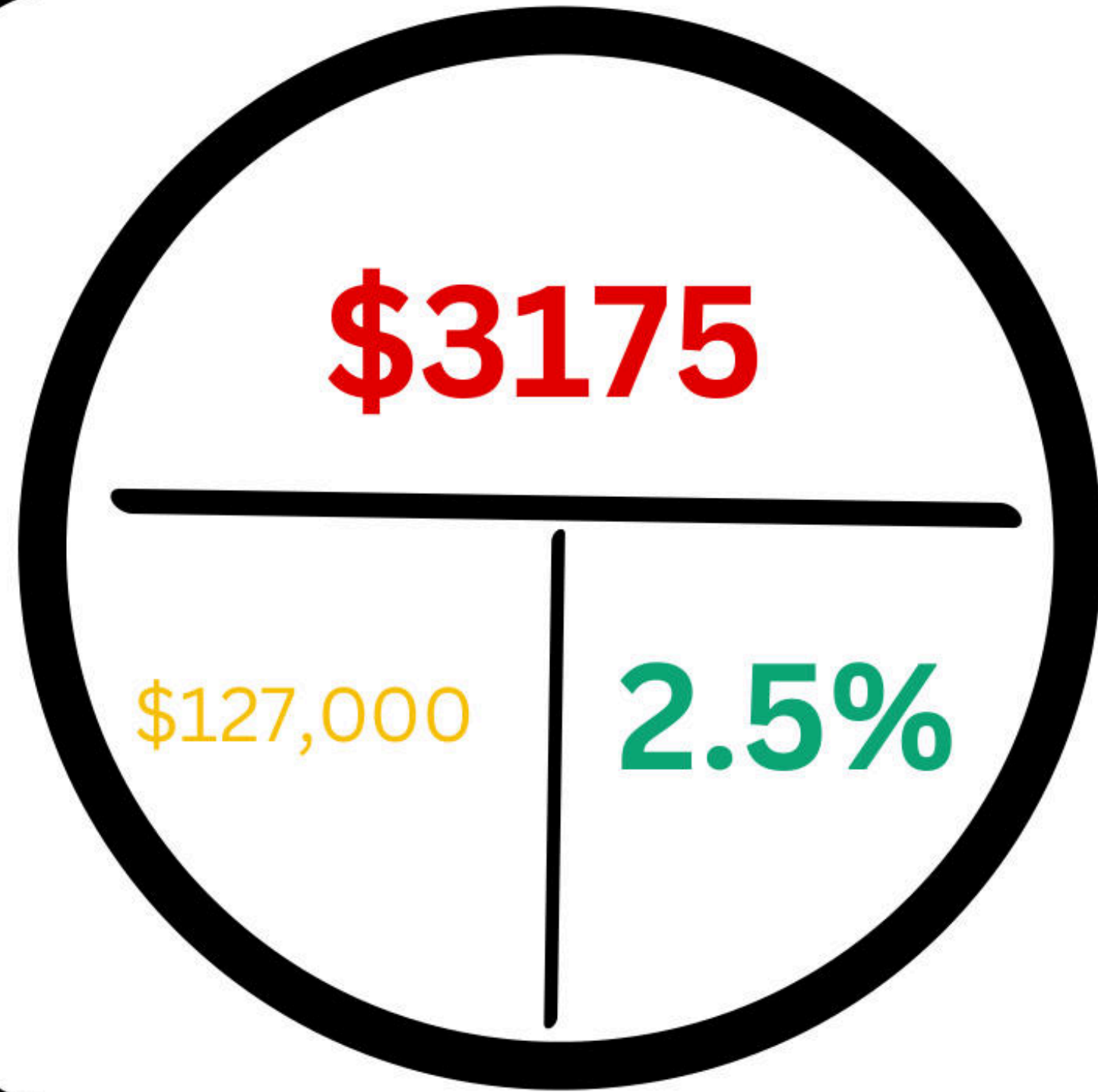
Step 1: Take the total that he received and subtract the salary

\$3675 - \$500 of salary = \$3175 Commission on sales

Step 2: Divide his total Commission by 2.5%

**\$3175 / 2.5% = \$3175 / 0.025 =
\$127,000 value of the property sold**

Answer 4



Use the T method
Part is the smallest
Base is the biggest
Rate is %

Question No. 5

The home on Dove St. is valued at \$95,000. Property in the area is assessed at 60% of its value and the local tax rate is \$2.85 per 100. What is the amount of the monthly taxes for this home?

Answer No 5

Step 1: Figure out what the assessed value is.

**\$95,000 x 60% = 95,000 x 0.60 equals
\$57,000 assessed value**

Answer No 5

Step 2: Divide by 100 because the tax rate is stated per 100 dollars

$$\text{\$57,000} / 100 = 570$$

570 x \\$2.85 which is the tax rate

= \$1624.50 this is the annual tax

**YOU ARE NOT DONE!
RE-READ THE QUESTION.**

Answer No 5

**Step 3: Divide by 12 to get
the monthly taxes**

$$\text{\$1624.50} / 12 = \text{\$135.375}$$

ROUND UP

\\$135.38

Question No. 6

A house is valued at \$98,000. It is to be insured for 80% of its costs. Insurance costs \$0.60 per \$100 what is the annual interest premium?

Answer 6

Step 1: multiply house value x 80% =

$$98,000 \times .80 = \$78,400$$

This is the insured the value

**Step 2 Divide the insured value by 100 & then
multiply by \$0.60 per hundred**

$$78,400 / 100 = 784 \times .60(\text{per } 100) = \$470.40$$



Investment

Question

No.7

Four investors pulled their savings and purchased the vacation home for \$125,000. If one person invested \$30,000 and two others each combined \$35,000, what percentage of ownership was left for the 4th investor?

Answer

No. 7

Step 1: Hal \$30,000 + Olivia \$35,000 + Ron \$35,000 = \$100,000

Step 2: Subtract the cost of the vacation home \$125,000 minus the \$100,000 contribution of the three = \$25,000 which is Marvin's contribution.

**Step 3: Part/whole = part
 $25,000 / 125,000 = .20$ or 20%**



Question No. 8

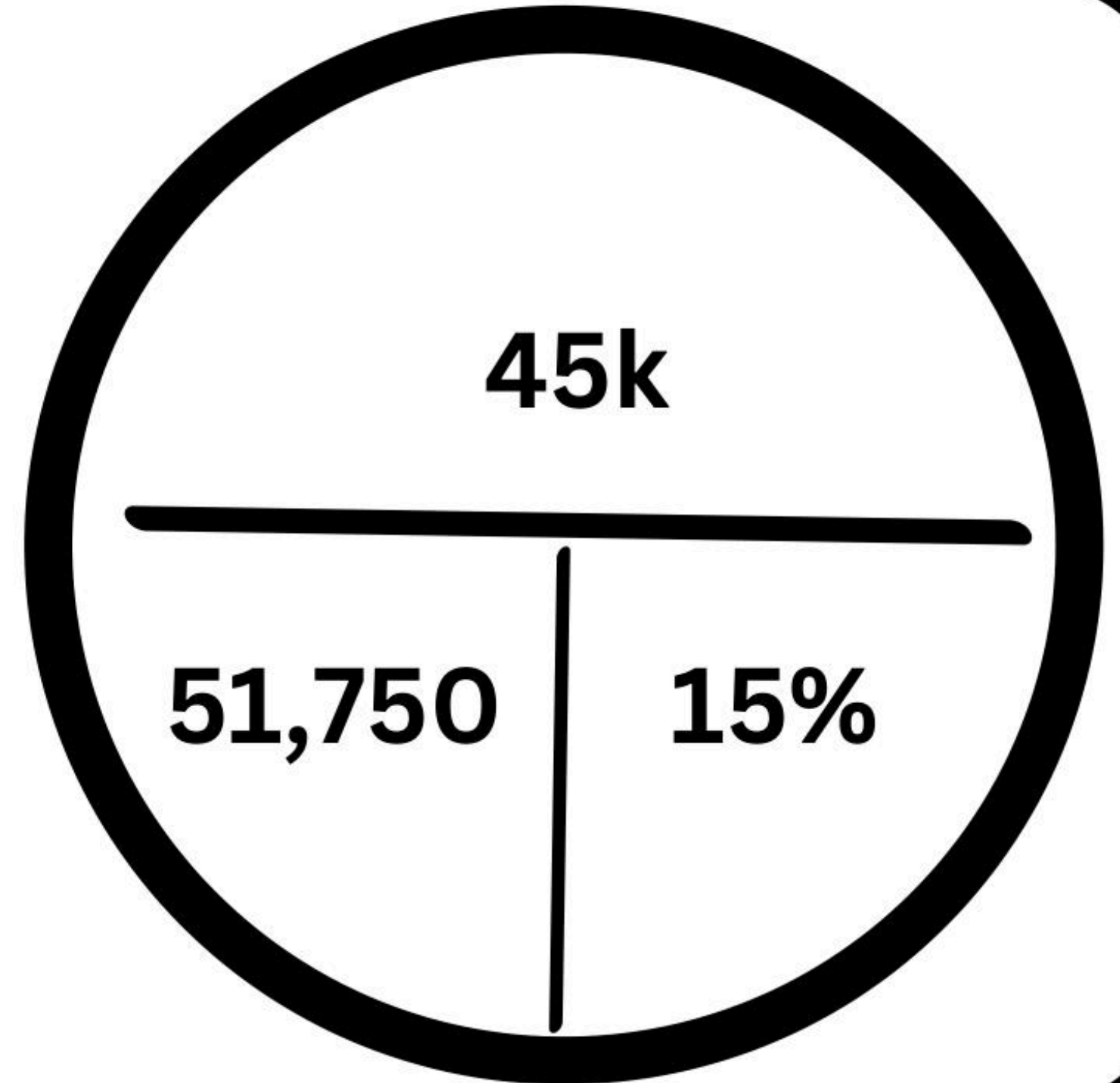
An investor bought a building lot for \$45,000 and sold it two years later for 15% profit. How much did it sell for?

THIS IS AN APPRECIATION Q: MEANS +

Answer 8

**Step 1. \$45,000 + 15%
of \$45,000.**

**or \$45,000 x 1.15 =
\$51,750**



Question No. 9

A house listed for \$249,999. The buyers offered \$225,000, and the sellers countered with 235,000, which the buyer accepted. The buyers are making a down payment of 20% and are financing the rest at 5.25% for 30 years how much would their monthly principal and interest payment be? LOTS OF GOBBLY GOOP!!!!

Answer9

Step . 1 turn to page 271 and look at the amortization chart.

**Step 2 \$235,000 purchase price x 80% OR
.80(PORTION BORROWED)= \$188,000 mortgage
amount.**

**Step 3 Reduce the mortgage amounts by thousands
 $188,000 / 1000 = 188$**

**Step 4 $188 \times \$5.53$ (monthly payment per thousand) =
\$1039.64**

Question No. 10

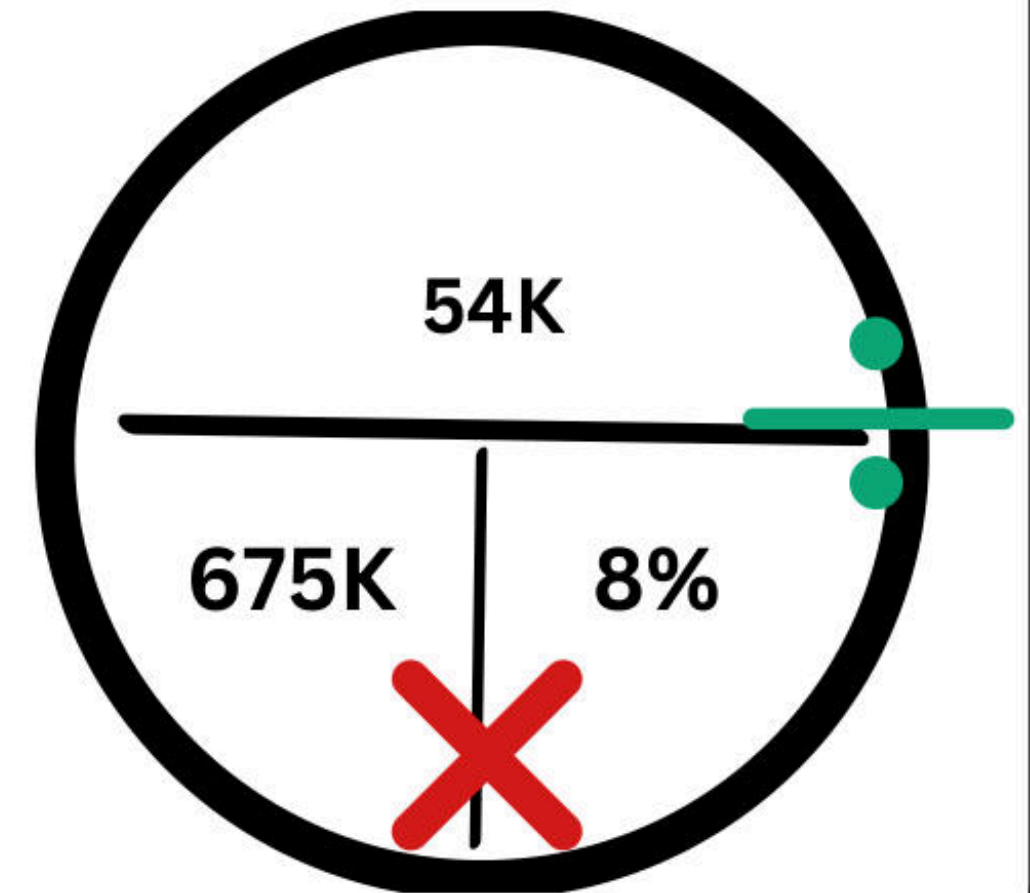
The landlord leases the 13 apartments in the Overton arms for total monthly rental of \$4,500. If this figure represents an 8% annual return on the landlord's investment, what was the original price of the property?

ANSWER No.10

Step 1 figure out the annual rate.

$$\text{\$4500} \times 12 \text{ months} = \text{\$54,000}$$

**Step 2 $\text{\$54,000} / 8\% =$
 $\text{\$675,000}$ original cost of the
property**





Seller's Net

Question No. 11

The seller receives a net amount of \$168,000 from the sale of his house after paying \$1200 in legal fees and other fees and 6% sales Commission what was the selling price of the house?

ANSWER No.11

**Step 1 add the net sales amount of
\$168,000 + \$1200 in legal fees =
\$169,200 sale price.**

Step 2 now figure out the Commission.

**Remember \$169,200 represents
94% of the sale price (you cant just add 6%)**

**Step 3 \$169,200 / .94 =
\$180,000 sale price**

Question No. 12

The seller receives 2 offers for their property at the same time period the first buyer offers \$95,000 all cash. The second buyer offers \$100,000 subject to obtaining a conventional mortgage loan with 20% down and asking the seller to pay three points to their lending institution.

The seller decides to accept the all-cash offer.

If they had accepted the second buyer's offer instead they would have received how much more closing?

ANSWER No.12

Step 1 figure out the points first.

\$80,000 x 3% = \$2400 for points

**Step 2 take the \$100,000 second buyers offer subtract
\$95,000 from the first offer =**

\$5000 received with the higher offer

**. Step 3 subtract \$5000 - \$2400(points) = \$2,600
realized with the higher offer after paying off the
points.**

Cash is not always king?



Finacning

Question No. 13

An FHA loan on a house price between \$50,000 and \$100,000 requires a loan-to-value ratio of no more than 97.76%. If the buyer finances the purchase of a 95,000 dollar home with an FHA loan, how much cash must she have for a down payment?

ANSWER No.13

Step 1 100% price - 97.76% loan =
2.24% down payment

Step 2 \$95,000 x 2.24% = \$2128

Question No.14

A lending institution allows its borrowers to spend 25% of their income for housing expenses. What is the maximum monthly payments allowed for family with an annual income of \$37,000 and no other debts?

ANSWER No.14

Step 1 figure out the monthly income.

$$\text{\$37,000} / 12 \text{ months} = \text{\$3083.33}$$

$$\text{Step 2 } \$3083.33 \times 25\% =$$

**\$770.83 permissible mortgage
payments**

Question No.15

A man's monthly mortgage payment for principal and interest is \$628.12. His property taxes are \$1800 a year, and his annual insurance premium is \$365 .

What is his total monthly payment of PITI, principal interest taxes and insurance?

Answer No. 15

Step one figure out what the monthly property taxes are.

$$\text{\$1800} / 12 \text{ months} = \text{\$150}$$

Step 2 Figure out the monthly insurance premium $\text{\$365} / 12 \text{ months}$ is $\text{\$30.42}$

Step 3 add $\text{\$150} + \text{\$30.42} + \text{\$628.12}$ equals $\text{\$808.54}$ total monthly payment

Question No.16

A first time buyer is purchasing a home for \$129,500. His lender requires 20% down payment and two points are closing. In addition, the buyer has \$750 in closing costs. What is the total amount he needs to close?

ANSWER No.16

Step 1 $\$129,500 \times 80\%$ equals a mortgage loan of **\$103,600**

Step 2 figure out the points $\$103,600 \times 2\% =$

\$2072 in points

Step 3 Figure out the down payment $129,500 \times 20\% =$

25,900 is the down payment + **\$750** closing costs +

the cost of the points **\$2072**

= 28,722

Question No.17

The buyer offers to buy a house for \$120,000 and seek a fixed rate loan at \$90,000 for 25 years. One lender offers them a loan for 10% with no points monthly payment of \$817.85. The second lender requires 2 points for our 9.5% loan with monthly payments of \$786.35. If the buyer decides to pay the points and take the lower interest rate loan, how long will it take for them to save on their lower payment have made up for the extra cost of the closing?

ANSWER No.17

Step one figure out the points $\$90,000$ loan $\times 2\%$ equals **\$1800** paid in points

Step 2 figure out how much it saves each month with a lower payment.

Subtract $\$817.85 - \$786.35 =$ **\$31.50 each month**

Step 3 $\$1800 /$ by $\$31.50 = 57.14$ months to recoup the payments **57.14 months /12M = 4.75 (THIS IS 4YRS + 3/4)**

.75 (3/4 of a year) $\times 12m = 9m$

ANSWER IS 4YR AND 9M

Question No.18

A father is curious to know how much money his son and daughter-in-law still own on their mortgage loan he knows that the interest portion of their last monthly payment was \$391.42. If the owners are paying interest at the rate of 7% what are the outstanding balances of their loans before the last payment was made?

ANSWER No. 18

Step 1 find the annual interest rate

$$\text{\$391.42} \times 12 \text{ months} = \text{\$4697.04}$$

$$\text{Step 2 } \$4697.04 / 7\% = \text{\$67,100.57}$$

Question No.19

A 30 year fixed rate amortized mortgage for \$100,000 at 7% interest requires monthly payments of \$665.30. What is the total amount of interest paid on this loan during the life of the mortgage?

ANSWER No.19

Step #1 30 years x 12 months

360 payments

Step #2 360 payments x \$665.30 =

\$239,508 total payments for P&I

Step #3 \$239,508 total payments

-\$100,000 principal repayment =

\$139,508 interest

Question No.20

In a sale of residential property, real estate taxes for the current year amounted to \$975 and have already been paid by the seller. The sale is to be closed on October 27th. What is the amount of real estate pro rate to be credited to the seller?

ANSWER No.20

Step #1 $\$975 / 12 \text{ months} =$
\$81.25 monthly property tax

Step #2 $\$81.25 / 30 \text{ days}$ is a day rate of **\$2.708**

Step #3 $\$81.25 \times 2 \text{ months}$ is **\$162.50** representing N&D

Step #4 $\$2.708 \times 4 \text{ days}$ is **\$10.83**
(represents 27th, 28th, 29th, 30th)

Step #5 $\$162.50 + 10.82 =$
\$173.332 rounded to up is \$173.33

Question No.21

The buyer is assuming a seller's mortgage with an interest rate of 5%. The unpaid balance after the most recent payment was \$161, 550. The seller made the payments due September 1st at and the sale is to be closed on September 23rd. What is the amount of the mortgage interest pro rate to be credited to the buyer at the closing

ANSWER No.21

step #1 \$161,550 x 5% interest rate equals

\$8077.50 annual interest

step #2 find the monthly interest \$8077.50/ 12 months

= \$673.13 monthly

step #3 \$673.13 ÷ by 30 days

= \$22.44 one days interest

step #4 \$22.44 x 22 days = \$493.64.

That interest will be paid to the next month's payment so seller owes it to the buyer

The background features a central white area surrounded by jagged, comic-book-style borders. The left side is red with diagonal lines and three yellow stars. The right side is yellow with diagonal lines and one yellow star. The bottom is split between red and yellow with diagonal lines and two yellow stars.

Area

Question No.22

**If the frontage of $\frac{1}{2}$ acre lot is 75 feet
how deep is the lot?**

ANSWER No.

Step #1 **$43,560 / 2 =$**

21,780 square feet in the lot

step #2 **$21,780 / 75$ which is the width**
 $= 290$ feet deep

Question No.23

A rectangular lot measures 60 feet wide and has an area of 1200 square yards. What is the length of the lot?

You're going to have to convert this question

ANSWER No.23

**step #1 1200 square yards x 9 equals 10,800
square feet**

the formula for area is $\text{area} = \text{length} \times \text{width}$

step #2 $10,800 = \text{length} \times 60$

step #3 $10,800 / 60 = 180 \text{ feet}$

Question No.24

**A 5 acre lot has front footage of 300 feet
how long is it?**

ANSWER No.24

Step #1 **43,560 feet per acre x 5 =**
217800 square feet

Step #2 **217,800 / 300 feet of front**
footage = 726 feet long

Question No.25

A buyer signed an agreement to purchase a condominium apartment. The contract stipulated that the seller replaced the damaged bedroom carpet. The carpet the buyer has chosen cost \$16.95 per square yard plus \$2.50 per square yard for installation if the bedroom dimensions are as illustrated how much will the seller have to pay for the job? REFER TO THE DIAGRAM!!!



Miscellaneous

Q31-34

QUESTION No. 31

The buyer agrees to a purchase price of \$200,000 and makes of 5% earnest money deposit. 10 days later the buyer gives an additional \$20,000 towards the purchase price. What is their balance due in cash at closing if they are securing an 80% loan to value mortgage?

ANSWER No.31

Step #1 $\$200,000 \times 5\% = \$10,000$ of earnest money + $\$20,000 =$ **\$30,000 total escrow**

Step #2 $\$200,000 \times 80\% \text{ltv} =$
\$160,000 mortgage

Step#3 $\$200,000$ purchase price - $\$160,000$ mortgage = $\$40,000$ dp - $\$30,000$ ESCROW =
\$10,000 DUE AT CLOSING

QUESTION No.32

A property closes on June 7th. The annual taxes of \$775 and a special assessment of \$86 for the current calendar year have been paid in full on January one period if these payments are prorated, what amount is returned to the seller?

ANSWER No.32

Step #1 \$775 taxes / 360 days/ year =

\$2.15 Daily tax amount

Step #2 June 6th through December 30th is

204 days x \$2.15 = \$438.60 (6m+24days)

Step # 3 \$86 for special assessment / 360 days

= \$0.24 day

Step 4 \$.24 x 204 days = \$48.73

\$48.73+ \$438.60= \$488

QUESTION No.33

A percentage lease calls for \$460 a month rent, plus 4.5% of the annual gross over \$100,000. If the business paid \$7780 last year what was the gross income of the business?

ANSWER No. 33

Step #1 base annual rent equals

\$460 x 12 months equals \$5520

Step #2 total rent is \$7780 - \$5520 = \$2260

Step #3 \$2260/4.5% = \$50,222

**which represents the gross sale over \$100,000
that the rent is based on**

total sales were 150,222 (\$100,000+ \$50,222)

QUESTION No.34

A broker is expecting to receive 6% commission on the sale of \$250,000 house. How much is the commission

ANSWER No.34

$$\text{\$250,000} \times 6\% - \text{\$15,000}$$

Congratulations!

SUPER!