

Modern Real Estate Practice in Illinois, 6th Edition
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Real Estate Mathematics Practice Problems

1. The value of your house, not including the lot, is \$191,000 today. What was the original cost if it has depreciated 5% per year for the past 7 years?
 - a. \$167,407.41
 - b. \$195,789.47
 - c. \$124,150.00
 - d. \$293,846.15

2. What is the price per front foot for a 100' x 125' lot that sold for \$125,000?
 - a. \$1,250.00
 - b. \$1,000.00
 - c. \$556.00
 - d. \$10.00

3. If the savings and loan gives you a 90% loan on a house valued at \$288,500, how much additional cash must you produce as a down payment if you have already paid \$14,500 in earnest money?
 - a. \$13,500
 - b. \$14,000
 - c. \$14,350
 - d. \$28,850

4. What did the owners originally pay for their home if they sold it for \$298,672 which gave them a 12% profit over their original cost?
 - a. \$286,830
 - b. \$266,671
 - c. \$289,700
 - d. \$210,510

5. What price would you pay for a building producing \$25,250 annual net income and showing a minimum rate of return of 7%?
- a. \$360,714
 - b. \$323,626
 - c. \$301,250
 - d. \$322,625
6. The sale of Mrs. Gate's home is to close on September 28. Included in the sale is a garage apartment that is rented to Sandy Dart for \$850 per month. Sandy has paid the September rent. What is the rent proration using actual days and prorating through the day of closing?
- a. \$325.67
 - b. \$ 56.67
 - c. \$350.00
 - d. \$175.00
7. What is the total cost of a driveway 15' wide, 40' long and 4" thick if the concrete costs \$60.00 per cubic yard and the labor costs \$1.25 per square foot?
- a. \$527.25
 - b. \$693.75
 - c. \$1,194.00
 - d. \$1,581.75
8. An owner agrees to list his property on the condition that he receives at least \$47,300 after paying a 5% broker's commission and paying \$1,150 in closing costs. At what price must it sell?
- a. \$48,450
 - b. \$50,815
 - c. \$50,875
 - d. \$51,000

9. The Loving Gift Shop pays rent of \$600 per month plus 2.5% of gross annual sales in excess of \$50,000. What was the average monthly rent last year if gross annual sales were \$75,000?
- a. \$1,125.00
 - b. \$756.25
 - c. \$600.00
 - d. \$652.08
10. If your monthly rent is \$825, what percent would this be of an annual income of \$21,000?
- a. 25%
 - b. 47%
 - c. 33 1/3%
 - d. 40%
11. Two brokers split the 6% commission equally on a \$273,000 home. The selling salesperson, Joe, was paid 70% of his broker's share. The listing salesperson, Janice, was paid 30% of her broker's share. How much did Janice receive?
- a. \$2,457
 - b. \$5,733
 - c. \$2,533
 - d. \$2,314
12. Find the number of square feet in a lot with a frontage of 75 feet, 6 inches and a depth of 140 feet, 9 inches.
- a. 10,626.63
 - b. 10,652.04
 - c. 216.25
 - d. 25,510.81

13. You must attempt to appraise a 28 unit apartment house employing the income approach. You discover that each unit rents for \$775 a month, an amount that seems consistent with like rental units in the vicinity. For the last five years the annual expenses of operation have averaged \$82,460.00. The complex has maintained a consistent occupancy rate of 95%. A potential investor can only be located if the return is 9.5%. What value would you arrive at using these variables?
- a. \$2,741,100
 - b. \$868,000
 - c. \$1,736,000
 - d. \$1,873,100
14. How much interest will the seller owe the buyer for a closing date of August 10 if the outstanding loan balance is \$243,580? The interest rate on this assumable loan is 6.5% and the last payment was paid on August 1. Prorations are to be done through the day of closing and using a statutory year.
- a. \$439.80
 - b. \$454.22
 - c. \$879.59
 - d. \$481.33
15. The buyer has agreed to pay \$175,000 in sales price, 2.5 loan discount points and a 1 point origination fee. If the buyer receives a 90% loan-to-value ratio, how much will the buyer owe at closing for points?
- a. \$1,575.00
 - b. \$3,937.50
 - c. \$5,512.50
 - d. \$6,125.00
16. Calculate eight months interest on a \$250,000 loan at 6.25%.
- a. \$10,475.00
 - b. \$10,416.67
 - c. \$12,375.00
 - d. \$ 868.06

17. A 100 acre farm is divided into lots for homes. The streets require $\frac{1}{8}$ of the whole farm and there are 140 lots. How many square feet are there in each lot?
- a. 43,560
 - b. 35,004
 - c. 31,114
 - d. 27,225
18. The 2008 tax bill on the Burns' home was \$6,282 and was paid in December of 2008. The Burns have sold their home and will close on April 23, 2009. How much will the tax proration be, using a calendar year and prorating through the day of closing?
- a. \$1,944.84
 - b. \$1,402.41
 - c. \$1,396.89
 - d. \$1,427.33
19. What is the monthly net income on an investment of \$115,000 if the rate of return is 12.5%?
- a. \$1,150.00
 - b. \$1,197.92
 - c. \$7,666.67
 - d. \$14,375.00
20. A salesperson sells a property for \$258,500. The contract he has with his broker is 40% of the full commission earned. The commission due to the broker is 6%. What is the salesperson's share of the commission?
- a. \$9,306
 - b. \$6,204
 - c. \$3,510
 - d. \$2,340

21. Vicki buys 348,480 square feet of land at \$.75 per square foot. She divides the land into 2 lots per acre. If she keeps 3 lots for herself and sells the others for \$24,125 each, what percent of profit does she realize?
- a. 47.4%
 - b. 32.3%
 - c. 20%
 - d. 16.7%
22. \$437 was the insurance premium paid in full in 2008 for a 1-year insurance policy that expires June 6, 2009. The house is sold and scheduled to close on February 16, 2009. The buyers are assuming the sellers' insurance policy. What is the amount of the insurance proration if a banker's year is used and all prorations are done through the day of closing?
- a. \$133.52
 - b. \$134.74
 - c. \$302.26
 - d. \$304.69
23. What is the interest rate on a \$10,000 loan with semi-annual interest of \$450?
- a. 7%
 - b. 9%
 - c. 11%
 - d. 13.5%
24. A warehouse is 80' wide and 120' long with ceilings 14' high. If 1,200 square feet of floor surface has been partitioned off floor to ceiling for an office, how many cubic feet of space will be left in the warehouse?
- a. 151,200
 - b. 134,400
 - c. 133,200
 - d. 117,600

25. A small office building produces \$68,580 annual net operating income. What price would you pay for this property to show a minimum return of 12% on your investment?
- a. \$489,857
 - b. \$571,500
 - c. \$685,800
 - d. \$768,096
26. A buyer is assuming the balance of a seller's loan. The interest rate is 8% and the last monthly payment of \$578.16 was paid on April 1 leaving an outstanding balance of \$18,450. Using a banker's year, compute the interest to be paid by the seller if the sale is to be closed on April 19. Prorate through the day of closing.
- a. \$110.83
 - b. \$82.00
 - c. \$77.90
 - d. \$123.00
27. The lot you purchased 5 years ago for \$15,000 has appreciated 3.5% per year. What is it worth today?
- a. \$12,375
 - b. \$15,525
 - c. \$17,250
 - d. \$17,625
28. A lot has a frontage of 100' and a depth of 150'. If the building line regulations call for a setback of 25' at the front and 6' on the two sides, how many square feet of useable space are left for the building?
- a. 10,350
 - b. 11,000
 - c. 11,750
 - d. 15,000

29. A lease calls for \$1,000 per month minimum plus 2% of annual sales in excess of \$100,000. What is the annual rent if the annual sales were \$150,000?
- a. \$12,000
 - b. \$13,000
 - c. \$14,000
 - d. \$15,000
30. The 2008 taxes on Don Mark's condominium were paid in full and amounted to \$1,468. Don sold his condominium to Chuck Harris and closed the sale on August 29, 2009. What was the prorated tax amount using a calendar year if the proration was calculated through the day of closing?
- a. \$969.28
 - b. \$502.74
 - c. \$970.51
 - d. \$497.49
31. There is a tract of land that is 1.25 acres. The lot is 150 feet deep. How much will the lot sell for at \$65 per front foot?
- a. \$9,750
 - b. \$8,125
 - c. \$23,595
 - d. \$8,125
32. If the broker received a 6.5% commission that was \$15,200, what was the sales price of the house?
- a. \$280,400
 - b. \$233,846
 - c. \$277,200
 - d. \$286,600

33. Sue earns \$120,000 per year and can qualify for a monthly PITI payment equal to 25% of her monthly salary. If the annual tax and insurance is \$3678.24, what is the loan amount she will qualify for if the monthly PI payment factor is \$10.29 per \$1,000 of loan amount?
- a. \$266,000
 - b. \$243,000
 - c. \$240,500
 - d. \$213,166
34. Find the cost of building a house 29' x 34' x 17' with a gable roof 8' high at the highest point. The cost of construction is \$25 per cubic foot.
- a. \$555,463
 - b. \$517,650
 - c. \$537,715
 - d. \$527,731
35. You invest \$50,000 at a rate of return of 12%. What is the net operating income?
- a. \$6,000
 - b. \$5,600
 - c. \$5,000
 - d. \$4,167
36. You pay \$365.53 monthly interest on a loan bearing 9.25% annual interest. What is the loan amount rounded to the nearest hundred dollars?
- a. \$41,400
 - b. \$42,800
 - c. \$46,300
 - d. \$47,420
37. What percentage of profit would you make if you paid \$20,500 for a lot, built a home on the lot that cost \$193,000 and then sold the lot and house together for \$234,550?
- a. 13%
 - b. 23%
 - c. 10%
 - d. 45%

38. You are purchasing a four-plex and going to close on November 4. Each apartment rents for \$975 per month. On November 1, one apartment is vacant and the others paid the November rent. Compute the rent proration through the day of closing.
- a. \$2,230
 - b. \$2,307
 - c. \$2,535
 - d. \$2,194
39. An income producing property has \$62,500 annual gross income and monthly expenses of \$1,530. What is the appraised value if the appraiser uses a 10% capitalization rate?
- a. \$441,400
 - b. \$625,000
 - c. \$183,600
 - d. \$609,700
40. A new house and lot cost Mr. Jones \$265,000. Of this total price, it was estimated that the lot was worth \$40,000. Mr. Jones held the property for 8 years. Using the straight-line method, assuming an annual depreciation of 1% on the house and an annual increase of 8% on the lot, what would be the total value of the property at the end of 8 years?
- a. \$247,840
 - b. \$272,600
 - c. \$281,120
 - d. \$301,400
41. The seller received a \$121,600 check at closing after paying a 7% commission, \$31,000 in other closing costs and the \$135,700 loan payoff. What was the total sales price?
- a. \$288,300
 - b. \$306,300
 - c. \$308,500
 - d. \$310,000

42. A fence is being built to enclose a lot 125' by 350'. If there will be one 10' gate, how many running feet of fence will it take?
- a. 465
 - b. 600
 - c. 940
 - d. 960
43. Alfred pays \$2,500 each for four parcels of land. He subdivides them into six parcels and sells each of the six parcels for \$1,950. What was Alfred's percentage of profit?
- a. 14.5%
 - b. 17%
 - c. 52%
 - d. He lost money
44. A property sells for \$296,000. If it has appreciated 4% per year straight line for the past 5 years, what did the owner pay for the property 5 years ago?
- a. \$276,800
 - b. \$246,667
 - c. \$292,300
 - d. \$215,200
45. Bill earns an annual income of \$60,000 and Betty earns \$2,400 per month. How much can Bill and Betty pay monthly for their mortgage payment if the lender uses a 28% qualifying ratio?
- a. \$2,072
 - b. \$1,400
 - c. \$2,352
 - d. \$672
46. If Don borrows \$4,400 agreeing to pay back principal and interest in 18 months, what annual interest rate is Don paying if the total payback is \$5,588?
- a. 15%
 - b. 18%
 - c. 21.3%
 - d. 27%

47. If you purchase a lot that is 125' x 150' for \$8,750, what price did you pay per front foot?
- a. \$58.33
 - b. \$46.67
 - c. \$70.00
 - d. \$64.69
48. Kelli has been granted a 90% loan for \$340,500. How much will Kelli's monthly principal and interest payment be using a loan payment factor of \$7.16 per \$1,000 of loan?
- a. \$2,194.18
 - b. \$4,755.59
 - c. \$2,437.98
 - d. \$3,064.50
49. Calculate the amount of commission earned by a broker on a lot selling for \$61,000 if 6% is paid on the first \$50,000 and 3% on the remaining balance.
- a. \$3,330
 - b. \$3,830
 - c. \$3,600
 - d. \$3,930
50. A 50' x 100' lot has a 2,400 square foot house on it that contains four bedrooms and three bathrooms. What percent of the lot is not taken up by the house?
- a. 21%
 - b. 48%
 - c. 50%
 - d. 52%