

RE 618 / Fin 618 – Real Estate Investment Analysis
Leases & Building Measurement – Practice Problems

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- 1) As the Director of Real Estate for Oncer Inc., you are looking for 15,000 square feet of *usable* area for a new office you will be opening in Wichita. You are considering space in a Class-A office building containing 120,000 square feet of rentable area, of which 2,400 square feet is a central lobby that is used by all tenants in the building. The space you have seen is on the fourth floor, which contains a total of 29,000 square feet of usable area for tenants and 1,000 square feet of floor common area. This floor would be shared with several other tenants that currently lease 14,000 square feet of usable area. The leasing broker indicated that base rents will be \$20 per square foot (psf) of *rentable area*.
 - a) What is the floor load factor for this space?
 - b) What is the building load factor?
 - c) What is the total load factor for this building?
 - d) If you sign a lease for this space, how much total rentable area will the landlord try to assign to you?
 - e) What will your total annual rent be for this space?
 - f) What is the efficiency percentage of this building?
 - g) What is the total rent psf of usable space?
 - h) You are considering alternative space in a building with an efficiency percentage of 90.91%. This space would rent for \$19.00 psf of rentable area. Assuming that you require the same 15,000 square feet of usable area, which space is less expensive for you? Show calculations to support your conclusion.
- 2) A building owner is evaluating the following alternatives for leasing space in an office building for the next five years:

Option 1: Net lease with CPI adjustments. The rent will be \$8 psf the first year. After the first year, the rent will be adjusted to reflect any changes in the CPI. The CPI is expected to increase by 4 percent per year.

Option 2: Gross lease with expense stop. Rent will be \$13.75 psf each year. The landlord's responsibility for operating expenses is capped at \$5.00 psf.

Option 3: Net lease with steps. Rent will be \$7.50 the first year and increase by \$0.50 each year.

Operating expenses for the space are expected to be \$4.50 psf in the first year and increase by \$0.50 psf each year.

 - a) Calculate the effective rent to the owner (after expenses) for each lease alternative using a 12 percent discount rate.
 - b) How would you rank the alternatives in terms of risk to the property owner?

- c) Calculate the effective cost of each of these lease alternatives to the tenant.
 - d) Considering your answers to parts (b) and (c), which option would you choose if you were the *tenant*? Explain your reasoning briefly.
- 3) Consider a lease for 20,000 square feet of space and specifies base rent of \$15 psf. In addition, the lease provides for percentage rent of 4% of sales in excess of the natural breakpoint.
- a) Calculate the natural breakpoint for this lease.
 - b) Calculate the total rent to be paid on this lease if annual sales are \$5 million.
 - c) Suppose instead that the lease specifies a breakpoint of \$2.5 million. What will be the total rent paid if annual sales are \$5 million?
- 4) A building owner is evaluating the following alternatives for leasing space in an office building for the next five years:

Net lease with steps. Rent will be \$12 per square foot (psf) the first year and will increase by \$1.50 psf each year until the end of the lease. All operating expenses will be paid by the tenant.

Net lease with CPI adjustments. The rent will be \$14 psf the first year. After the first year, the rent will be increased by 50 percent of any increase in the CPI. The CPI is expected to increase by 3 percent per year.

Gross lease. Rent will be \$25 psf each year with the lessor responsible for payment of all operating expenses. Expenses are estimated to be \$8 psf during the first year and increase by \$1 psf per year thereafter.

Gross lease with expense stop and CPI adjustment. Rent will be \$22 the first year and increase by 50 percent of any change in the CPI after the first year with an expense stop at \$9 psf. The CPI and operating expenses are assumed to change by the same amount as outlined above.

- a) Calculate the effective rent to the owner (after expenses) for each lease alternative using a 12 percent discount rate.
- b) How would you rank the alternatives in terms of risk to the property owner?
- c) Considering your answers to parts (a) and (b), how would you compare the four alternatives?

5) Problem 2, page 254 in the text. As CFO for Everything.Com, you are shopping for 5,000 square feet of *usable* office space for 25 of your employees in Center City, USA. A leasing broker shows you space in Apex Atrium, a 10-story multitenanted office building. This building contains 300,000 square feet of gross building area. A total of 45,000 square feet is interior space and is nonrentable. The nonrentable space consists of areas contained in the basement, elevator core, and other mechanical and structural components. An additional 30,000 square feet of common area is the lobby area usable by all tenants. The 5,000 square feet of usable are that you are looking for is on the seventh floor, contains 28,000 square feet of rentable area, and is leased by other tenants who occupy a combined total of 20,000 square feet of usable space. The leasing broker indicated that base rents will be \$30 per square foot of *rentable area*.

- a) Calculate the total rentable area in the building (excluding lobby).
- b) Calculate the load factor and common area on the seventh floor only.
- c) Calculate the rentable area, including the load factor for common areas on the seventh and the total rent per square foot of usable space that will be paid by Everything.Com if it chooses to lease the space.
- d) Adjust (b) assuming that the owner attempts to increase the load factor for other common areas in the building.
- e) Calculate total rent per square foot of usable space, assuming that adjusted load factors are applied to usable area for both the common areas on the seventh floor.

_____ 1. Olberson's has leased 40,000 square feet of retail space with base rent of \$4.50 per square foot and percentage rent of 8% of gross sales above the natural breakpoint. What is the natural breakpoint on this lease?

- A. \$2.25 million
- B. \$180,000
- C. \$14,400
- D. \$500,000

_____ 2. Elbows Unlimited has a lease for 25,000 square feet of space with base rent of \$13.00 per square foot with percentage rent of 2.5% of sales beyond \$10 million. What is the total rent EW will pay if sales are \$15 million?

- A. \$325,000
- B. \$400,000
- C. \$13 million
- D. \$450,000

_____ 3. Arthur Reed, Inc. has a lease in which the base rent will increase by a fixed 5% each year. This lease would be an example of a(n)

- A. step lease.
- B. percentage lease.

- C. indexed lease.
 - D. gross lease.
- _____ 4. True or False: An expense stop limits the amount of operating expenses the tenant must pay in a net lease.
- _____ 5. What is the effective rent on a 5-year net lease with an initial base rent of \$12.50 per square foot in years 1 and 2 and \$15.00 per square foot in years 3 through 5? Assume a 12 percent discount rate.
- A. \$9.97 psf
 - B. \$14.00 psf
 - C. \$19.42 psf
 - D. \$13.82 psf
- _____ 6. Which of the following leases imposes the most risk on the tenant?
- A. A gross lease
 - B. A gross lease with an expense stop
 - C. A net lease with CPI adjustment
 - D. A percentage lease
- _____ 7. The third floor of an office building has total rentable area of 48,000 square feet. The usable office area is divided up into four offices each containing 11,500 square feet. What is the load factor for this floor?
- A. 0.9583
 - B. 1.0435
 - C. 0.2396
 - D. 4.1739
- _____ 8. A different office building has a main lobby with 10,000 square feet. Other than this lobby, the building contains 120,000 square feet of rentable area. Suppose that the load factor of the fifth floor of this building is 1.10. What is the total load factor for a tenant on the fifth floor?
- A. 1.0833
 - B. 1.1000
 - C. 1.1917
 - D. 0.8392
- _____ 9. A building has an efficiency percentage of 0.88. The landlord is asking for rent of \$22.00 per square foot of rentable area in the building. What is the total rent per square foot of usable area?
- A. \$19.36
 - B. \$22.00
 - C. \$25.00
 - D. \$41.36

- _____ 10. You own an office building with 45,000 square gross leasable area. Of that, 5,000 square feet are common areas. What is the efficiency percentage for this building?
- A. 11.11%
 - B. 88.89%
 - C. 1.125
 - D. 12.50%
- _____ 11. What is the add-on-factor that will be used in this building?
- A. 1.125
 - B. 0.8889
 - C. 9.0
 - D. 1.42
- _____ 12. Suppose you are leasing 2,000 square feet of usable area to a tenant in the above building. What is the total square footage for which you will charge the tenant rent?
- A. 1,778
 - B. 2,000
 - C. 2,250
 - D. 2,848
- _____ 13. A lease in which the tenant pays the operating expenses on a building is called a
- A. gross lease.
 - B. net lease.
 - C. percentage lease.
 - D. step lease.
- _____ 14. A lease in which the landlord pays all the operating expenses on the building is called a
- A. gross lease.
 - B. net lease.
 - C. percentage lease.
 - D. step lease.
- _____ 15. True or False: Market rents are always equal to contract rents.