

**Question 1 of 29**

A plot of land can be improved at a construction cost of \$500,000 if the economy improves. In this case, the value of the improved property will be \$1.2 million. If the economy declines, the construction cost drops to \$200,000 and the improved property value drops to \$400,000. If comparable improved properties currently sell for \$900,000 and the risk-free rate is 0%, which of the following represents the risk-neutral probability of the economy declining?

- A. 25%
  - B. 37.5%
  - C. 50%
  - D. 62.5%
- 

**Question 2 of 29**

A university endowment makes a small allocation to a timberland investment. Which of the following best represents a drawback of this investment?

- A. fixed timber supply
  - B. timber's low correlation with traditional assets
  - C. long growth cycle
  - D. timber's variable harvesting schedule
- 

**Question 3 of 29**

All else equal, which of the following natural resource development projects should be carried out first, based on the low-hanging-fruit principle?

- A. extracting oil in a region that has OPEC-imposed restrictions on production
  - B. mining coal in a region that requires exploration permits
  - C. mining copper in a region that is subject to rigorous environmental review
-

**Question 4 of 29**

The global demand for agricultural products is driven by which of the following macro factors?

- I. Changing diets in emerging markets
- II. Global population growth
- III. Lower incomes in developing markets
- IV. Increased use of biofuels

- A. II, III, and IV only
  - B. I, II, and IV only
  - C. I, II, III, and IV
  - D. II and IV only
- 

**Question 5 of 29**

Pancho Morales is looking to purchase farmland that maximizes the multiple purpose value associated with the farmland. Given that each property he is considering can grow two different crops, which of the following farmland characteristics should Pancho select?

- A. The profitability of each crop is highly certain and the two crops are not highly positively correlated.
  - B. The profitability of each crop is highly uncertain and the two crops are positively correlated.
  - C. The profitability of each crop is highly certain and the two crops are positively correlated.
  - D. The profitability of each crop is highly uncertain and the two crops are not highly positively correlated.
-

**Question 6 of 29**

Use the information below about a farmland investment to answer the question that follows.

<b>Value of property</b>	\$900,000
<b>Annual revenue</b>	\$280,000
<b>Annual real estate tax</b>	\$60,000
<b>Annual insurance cost</b>	\$40,000
<b>Other annual operating expenses</b>	\$104,000

Which of the following comes closest to the farmland investment's cap rate?

- A. 8.4%
- B. 12.4%
- C. 16.4%
- D. 20.4%

---

**Question 7 of 29**

A farmland has annual revenues of \$50,000, with annual taxes of \$7,500. If the farmland owner expects the cap rate to be 8%, which of the following most closely represents the value of the farmland property?

- A. \$340,000
- B. \$531,250
- C. \$617,500
- D. \$625,000

---

**Question 8 of 29**

Which of the following best describes the type of undeveloped land on which construction has begun but is not yet ready for homebuilding?

- A. unfinished lot
- B. paper lot
- C. entitled lot
- D. blue top lot

**Question 9 of 29**

Which of the following types of farmland comprise the NCREIF Farmland Index?

- A. vegetable crop land and industrial crop land
  - B. row crop land and industrial crop land
  - C. row crop land and permanent crop land
  - D. vegetable crop land and permanent crop land
- 

**Question 10 of 29**

If the economy improves, a plot of land can be improved at a construction cost of \$200,000 and the value of the improved property will become \$450,000. However, if the economy declines, the construction cost drops to \$50,000 and the improved property value drops to \$80,000. If comparable improved properties currently sell for \$300,000 and the risk-free rate is 0%, which of the following comes closest to the value of the land as a call option?

- A. \$160,900
  - B. \$180,700
  - C. \$220,450
  - D. \$300,150
- 

**Question 11 of 29**

An undeveloped lot of land has a 20% chance of being developed. If development occurs, then the return on the land is expected to be 45%. If it remains undeveloped, the return is expected to be -5%. Which of the following is the expected return on the lot of land?

- A. 2%
  - B. 5%
  - C. 13%
  - D. 14%
-

**Question 12 of 29**

The asset volatility used to price an exchange option is driven by which of the following factors?

- I. Volatility of delivered asset
- II. Correlation between volatilities of delivered and received assets
- III. Strike price of received asset

- A. I and III only
  - B. II only
  - C. I and II only
  - D. I only
- 

**Question 13 of 29**

A large, appraised real estate property is estimated to have an annual volatility of returns of 9% and pair-wise correlations of returns with five other similar properties of 0.66. Which of the following best describes this property's return characteristics?

- A. The market-based return volatility is less than 9%, market-based return correlations are less than 0.66, and appraised returns are not lagged relative to market returns.
  - B. The market-based return volatility is less than 9%, market-based return correlations are greater than 0.66, and appraised returns are lagged relative to market returns.
  - C. The market-based return volatility is greater than 9%, market-based return correlations are greater than 0.66, and appraised returns are lagged relative to market returns.
  - D. The market-based return volatility is greater than 9%, market-based return correlations are less than 0.66, and appraised returns are lagged relative to market returns.
- 

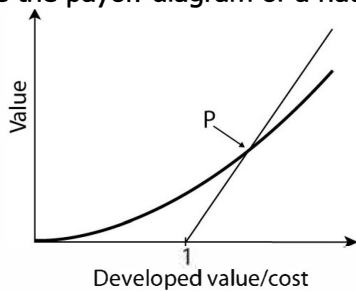
**Question 14 of 29**

An investor has purchased 40 acres of farmland at \$3,000 per acre using a loan with a 50% loan-to-value ratio and a 5.4% annual interest rate. The farmland's annual property taxes are \$140 per acre and annual insurance costs are \$2,800. Given that the investor receives annual rent of \$600 per acre of farmland, which of the following represents the farmland investment's operating income and net income, respectively?

- A. \$14,600; \$11,600
  - B. \$14,400; \$11,400
  - C. \$15,600; \$12,360
  - D. \$16,400; \$13,160
-

Question 15 of 29

Use the payoff diagram of a natural resource development project below to answer the question that follows.



Which of the following statements regarding this project is accurate?

- I. For values above point P, the time value of the development option is positive.
- II. For values above point P, the development option value is greater if the option is exercised immediately.
- III. The development option is out-of-the-money only when horizontal-axis values are less than one.

- A. II and III only
- B. I, II, and III
- C. II only
- D. I only

Question 16 of 29

Consider an investment in a vacant lot that is viewed as a call option, the value of which is influenced by a number of factors related to the development process. Which of the following is FALSE regarding the view of vacant land as a call option?

- A. The relevant volatility is that of the spread between expected sales price and construction costs.
- B. The underlying asset is the vacant lot and building.
- C. The payoff is the sales price of the completed development.
- D. The strike price is the cost of improving or building on the land.

Question 17 of 29

Which of the following is NOT an advantage of an investment in timber?

- A. flexible harvest schedule
- B. inflation hedge
- C. non-cyclicality
- D. low correlation with stocks and bonds

**Question 18 of 29**

Which of the following quarterly return characteristics applies to timber investments over the past two decades?

- A. lower volatility than world equities and large positive kurtosis
  - B. large volatility and low Sharpe ratio
  - C. no clustering around the mean and small maximum drawdown
  - D. markedly negative skewness and excess kurtosis
- 

**Question 19 of 29**

Roberto Torres is looking to add a farmland investment to his investment portfolio. Which of the following would LEAST likely be a primary motivation for him?

- A. Farmland has a liquid market with efficient prices.
  - B. Farmland is generally independent of financial markets.
  - C. Farmland serves as an effective hedge against inflation.
- 

**Question 20 of 29**

A portion of private land in the U.S. state of Wyoming has split estates. Which of the following more accurately describes the consequence of this in Wyoming?

- A. Ownership of the land has different tax liabilities.
  - B. The land is passed on to different heirs after the owner's death.
  - C. Surface and mineral estates are owned by different parties.
- 

**Question 21 of 29**

The cap rate used in real estate investment analysis is most similar to which of the following performance measures?

- A. return on equity
  - B. funds from operations
  - C. return on assets
  - D. internal rate of return
-

**Question 22 of 29**

Which of the following best describes a Timberland Investment Management Organization (TIMO)?

- A. A manufacturing firm that specializes in supplying wood products to homebuilders and developers.
  - B. A firm that brokers timberland deals and looks after timber investments for institutional investors.
  - C. A publicly-traded real estate investment trust that specializes in timberland investments.
  - D. An institutional investor that makes investments in a variety of assets, including timberland.
- 

**Question 23 of 29**

A farmland owner hires a farmer to manage his land. Since the farmland owner lives far from the land, he is unable to monitor all of the farmer's activities. As a result, the farmer sometimes gets lazy and does not maximize the potential value of the crops. This is an example of which of the following?

- A. degradation
  - B. selection bias
  - C. efficiency cost
  - D. agency cost
- 

**Question 24 of 29**

Which of the following is the best possible way to try to achieve a pure play investment in coal?

- A. invest in a master limited partnership that primarily owns coal
  - B. invest in a coal mine located on public land
  - C. buy and store coal
  - D. own the stock of a company that invests solely in coal futures contracts
- 

**Question 25 of 29**

Which of the following is most accurate regarding the difference between an investment in farmland and an investment in timberland?

- A. Farmland acts as a better inflation hedge.
  - B. The harvest schedule of farm crops is much more flexible than that of timber.
  - C. Farmland is less versatile than timberland.
  - D. The value of farmland is more heavily influenced by political risk than the value of timberland.
-

---

**Question 26 of 29**

Which of the following likely best explains the divergence in performance observed between the NCREIF Property Index and the NAREIT Index during the global financial crisis?

- A. The NCREIF Property Index's volatile prices were largely due to the use of appraisals.
- B. The NAREIT's price volatility is an accurate indicator of the true volatility of the underlying property values.
- C. The NCREIF Property Index's volatile prices declined at the same pace as underlying market prices.
- D. The NAREIT's price volatility was due in part to a contagion effect of the public equity market.

---

**Question 27 of 29**

Use the information below to answer questions 27 through 28.

An analyst has been asked to review an investment opportunity in an apartment complex with the following projections.

Market Value of Property	\$3,500,000
Mortgage Amount	\$2,500,000
Equity Investment	\$1,000,000
Annual Revenues	\$500,000
Property Taxes	\$150,000
Insurance	\$50,000
Interest	\$125,000

An analyst has been asked to review an investment opportunity in an apartment complex with the following projections.

Market Value of Property	\$3,500,000
Mortgage Amount	\$2,500,000
Equity Investment	\$1,000,000
Annual Revenues	\$500,000
Property Taxes	\$150,000
Insurance	\$50,000
Interest	\$125,000

Which of the following comes closest to the investment's return on assets?

- A. 8.6%
- B. 17.5%
- C. 21%
- D. 30%

**Question 28 of 29**

Use the information below to answer questions 27 through 28.

An analyst has been asked to review an investment opportunity in an apartment complex with the following projections.

Market Value of Property	\$3,500,000
Mortgage Amount	\$2,500,000
Equity Investment	\$1,000,000
Annual Revenues	\$500,000
Property Taxes	\$150,000
Insurance	\$50,000
Interest	\$125,000

An analyst has been asked to review an investment opportunity in an apartment complex with the following projections.

Market Value of Property	\$3,500,000
Mortgage Amount	\$2,500,000
Equity Investment	\$1,000,000
Annual Revenues	\$500,000
Property Taxes	\$150,000
Insurance	\$50,000
Interest	\$125,000

Which of the following comes closest to the investment's return on equity?

- A. 8.6%
- B. 17.5%
- C. 21%
- D. 30%

---

**Question 29 of 29**

Which of the following most accurately describes the change in timber ownership in the U.S. resulting from the dismantling of forest-products companies over the past 30 years?

- A. more retail investors
- B. fewer institutional investors
- C. fewer retail investors
- D. more institutional investors

### Answer Sheet

Question #	Question ID	Your Response				Flagged
1	L1-3.1.2-004	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
2	L1-3.1.3-004	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
3	L1-3.1.1-004	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		<input type="checkbox"/>
4	L1-3.1.4-011	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
5	L1-3.1.4-003	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
6	L1-3.1.4-015	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
7	L1-3.1.4-005	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
8	L1-3.1.2-001	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
9	L1-3.1.4-012	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
10	L1-3.1.2-005	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
11	L1-3.1.2-003	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
12	L1-3.1.1-003	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
13	L1-3.1.5-005	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
14	L1-3.1.4-016	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
15	L1-3.1.1-005	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
16	L1-3.1.2-002	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
17	L1-3.1.3-001	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
18	L1-3.1.6-001	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
19	L1-3.1.4-010	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		<input type="checkbox"/>
20	L1-3.1.1-002	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		<input type="checkbox"/>
21	L1-3.1.4-001	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
22	L1-3.1.3-002	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
23	L1-3.1.4-006	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
24	L1-3.1.1-001	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
25	L1-3.1.4-004	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
26	L1-3.1.5-003	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
27	L1-3.1.4-008	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
28	L1-3.1.4-007	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>
29	L1-3.1.3-003	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="checkbox"/>