CLEP®

Test Information Guide: College-Level Examination Program®

2015-16

Principles of Microeconomics

CollegeBoard

CLEP TEST INFORMATION GUIDE FOR PRINCIPLES OF MICROECONOMICS

History of CLEP

Since 1967, the College-Level Examination Program (CLEP®) has provided over six million people with the opportunity to reach their educational goals. CLEP participants have received college credit for knowledge and expertise they have gained through prior course work, independent study or work and life experience.

Over the years, the CLEP examinations have evolved to keep pace with changing curricula and pedagogy. Typically, the examinations represent material taught in introductory college-level courses from all areas of the college curriculum. Students may choose from 33 different subject areas in which to demonstrate their mastery of college-level material.

Today, more than 2,900 colleges and universities recognize and grant credit for CLEP.

Philosophy of CLEP

Promoting access to higher education is CLEP's foundation. CLEP offers students an opportunity to demonstrate and receive validation of their college-level skills and knowledge. Students who achieve an appropriate score on a CLEP exam can enrich their college experience with higher-level courses in their major field of study, expand their horizons by taking a wider array of electives and avoid repetition of material that they already know.

CLEP Participants

CLEP's test-taking population includes people of all ages and walks of life. Traditional 18- to 22-year-old students, adults just entering or returning to school, high-school students, home-schoolers and international students who need to quantify their knowledge have all been assisted by CLEP in earning their college degrees. Currently, 59 percent of CLEP's National (civilian) test-takers are women and 46 percent are 23 years of age or older.

For over 30 years, the College Board has worked to provide government-funded credit-by-exam opportunities to the military through CLEP. Military service members are fully funded for their CLEP exam fees. Exams are administered at military installations worldwide through computer-based testing programs. Approximately one-third of all CLEP candidates are military service members.

2014-15 National CLEP Candidates by Age*

Under 18 11%
18-22 years 43%
23-29 years 22%
30 years and older 24%
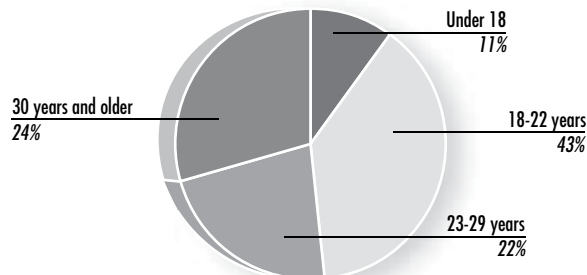
* These data are based on 100% of CLEP test-takers who responded to this survey question during their examinations.

2014-15 National CLEP Candidates by Gender

41%
59%
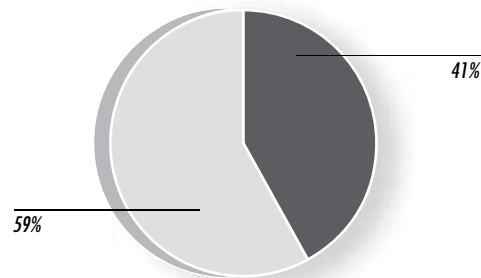
Computer-Based CLEP Testing

The computer-based format of CLEP exams allows for a number of key features. These include:

- a variety of question formats that ensure effective assessment

- real-time score reporting that gives students and colleges the ability to make immediate credit-granting decisions (except College Composition, which requires faculty scoring of essays twice a month)

- a uniform recommended credit-granting score of 50 for all exams

- "rights-only" scoring, which awards one point per correct answer

- pretest questions that are not scored but provide current candidate population data and allow for rapid expansion of question pools

CLEP Exam Development

Content development for each of the CLEP exams is directed by a test development committee. Each committee is composed of faculty from a wide variety of institutions who are currently teaching the relevant college undergraduate courses. The committee members establish the test specifications based on feedback from a national curriculum survey; recommend credit-granting scores and standards; develop and select test questions; review statistical data and prepare descriptive material for use by faculty (*Test Information Guides*) and students planning to take the tests (*CLEP Official Study Guide*).

College faculty also participate in CLEP in other ways: they convene periodically as part of standard-setting panels to determine the recommended level of student competency for the granting of college credit; they are called upon to write exam questions and to review exam forms; and they help to ensure the continuing relevance of the CLEP examinations through the curriculum surveys.

The Curriculum Survey

The first step in the construction of a CLEP exam is a curriculum survey. Its main purpose is to obtain information needed to develop test-content specifications that reflect the current college curriculum and to recognize anticipated changes in the field. The surveys of college faculty are conducted in each subject every few years depending on the discipline. Specifically, the survey gathers information on:

- the major content and skill areas covered in the equivalent course and the proportion of the course devoted to each area
- specific topics taught and the emphasis given to each topic
- specific skills students are expected to acquire and the relative emphasis given to them
- recent and anticipated changes in course content, skills and topics
- the primary textbooks and supplementary learning resources used
- titles and lengths of college courses that correspond to the CLEP exam

The Committee

The College Board appoints standing committees of college faculty for each test title in the CLEP battery. Committee members usually serve a term of up to four years. Each committee works with content specialists at Educational Testing Service to establish test specifications and develop the tests. Listed below are the current committee members and their institutional affiliations.

Kathryn S. Wilson, *Chair*	Kent State University
Samuel Andoh	Southern Connecticut State University
Irene Foster	The George Washington University
Denise Robson	University of Wisconsin — Oshkosh

The primary objective of the committee is to produce tests with good content validity. CLEP tests must be rigorous and relevant to the discipline and the appropriate courses. While the consensus of the committee members is that this test has high content validity for a typical introductory Principles of Microeconomics course or curriculum, the validity of the content for a specific course or curriculum is best determined locally through careful review and comparison of test content, with instructional content covered in a particular course or curriculum.

The Committee Meeting

The exam is developed from a pool of questions written by committee members and outside question writers. All questions that will be scored on a CLEP exam have been pretested; those that pass a rigorous statistical analysis for content relevance, difficulty, fairness and correlation with assessment criteria are added to the pool. These questions are compiled by test development specialists according to the test specifications, and are presented to all the committee members for a final review. Before convening at a two- or three-day committee meeting, the members have a chance to review the test specifications and the pool of questions available for possible inclusion in the exam.

At the meeting, the committee determines whether the questions are appropriate for the test and, if not, whether they need to be reworked and pretested again to ensure that they are accurate and unambiguous. Finally, draft forms of the exam are reviewed to ensure comparable levels of difficulty and content specifications on the various test forms. The committee is also responsible for writing and developing pretest questions. These questions are administered to candidates who take the examination and provide valuable statistical feedback on student performance under operational conditions.

Once the questions are developed and pretested, tests are assembled in one of two ways. In some cases, test forms are assembled in their entirety. These forms are of comparable difficulty and are therefore interchangeable. More commonly, questions are assembled into smaller, content-specific units called testlets, which can then be combined in different ways to create multiple test forms. This method allows many different forms to be assembled from a pool of questions.

Test Specifications

Test content specifications are determined primarily through the curriculum survey, the expertise of the committee and test development specialists, the recommendations of appropriate councils and conferences, textbook reviews and other appropriate sources of information. Content specifications take into account:

- the purpose of the test
- the intended test-taker population
- the titles and descriptions of courses the test is designed to reflect
- the specific subject matter and abilities to be tested
- the length of the test, types of questions and instructions to be used

Recommendation of the American Council on Education (ACE)

The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated CLEP processes and procedures for developing, administering and scoring the exams. Effective July 2001, ACE recommended a uniform credit-granting score of 50 across all subjects (with additional Level-2 recommendations for the world language examinations), representing the performance of students who earn a grade of C in the corresponding course. Every test title has a minimum score of **20**, a maximum score of **80** and a cut score of **50**. However, these score values cannot be compared across exams. The score scale is set so that a score of **50** represents the performance expected of a typical C student, which may differ from one subject to another. The score scale is not based on actual performance of test-takers. It is derived from the judgment of a panel of experts (college faculty who teach an equivalent course) who provide information on the level of student performance that would be necessary to receive college credit in the course.

Over the years, the CLEP examinations have been adapted to adjust to changes in curricula and pedagogy. As academic disciplines evolve, college faculty incorporate new methods and theory into their courses. CLEP examinations are revised to reflect those changes so the examinations continue to meet the needs of colleges and students. The CLEP program's most recent ACE CREDIT review was held in June 2015.

The American Council on Education, the major coordinating body for all the nation's higher education institutions, seeks to provide leadership and a unifying voice on key higher education issues and to influence public policy through advocacy, research and program initiatives. For more information, visit the ACE CREDIT website at www.acenet.edu/acecredit.

CLEP Credit Granting

CLEP uses a common recommended credit-granting score of 50 for all CLEP exams.

This common credit-granting score does not mean, however, that the standards for all CLEP exams are the same. When a new or revised version of a test is introduced, the program conducts a standard setting to determine the recommended credit-granting score ("cut score").

A standard-setting panel, consisting of 15–20 faculty members from colleges and universities across the country who are currently teaching the course, is appointed to give its expert judgment on the level of student performance that would be necessary to receive college credit in the course. The panel reviews the test and test specifications and defines the capabilities of the typical A student, as well as those of the typical B, C and D students.* Expected individual student performance is rated by each panelist on each question. The combined average of the ratings is used to determine a recommended number of examination questions that must be answered correctly to mirror classroom performance of typical B and C students in the related course. The panel's findings are given to members of the test development committee who, with the help of Educational Testing Service and College Board psychometric specialists, make a final determination on which raw scores are equivalent to B and C levels of performance.

---

*Student performance for the language exams (French, German and Spanish) is defined only at the B and C levels.

Principles of Microeconomics

Description of the Examination

The Principles of Microeconomics examination covers material that is usually taught in a one-semester undergraduate course in introductory microeconomics. This aspect of economics deals with the principles of economics that apply to the analysis of the behavior of individual consumers and businesses in the economy. Questions on this exam require candidates to apply analytical techniques to hypothetical as well as real-world situations and to analyze and evaluate economic decisions. Candidates are expected to demonstrate an understanding of how free markets work and allocate resources efficiently. They should understand how individual consumers make economic decisions to maximize utility, and how individual firms make decisions to maximize profits. Candidates must be able to identify the characteristics of the different market structures and analyze the behavior of firms in terms of price and output decisions. They should also be able to evaluate the outcome in each market structure with respect to economic efficiency, identify cases in which private markets fail to allocate resources efficiently, and explain how government intervention fixes or fails to fix the resource allocation problem. It is also important to understand the determination of wages and other input prices in factor markets and analyze and evaluate the distribution of income.

The examination contains approximately 80 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

Knowledge and Skills Required

Questions on the Principles of Microeconomics examination require candidates to demonstrate one or more of the following abilities.

- Understanding of important economic terms and concepts
- Interpretation and manipulation of economic graphs
- Interpretation and evaluation of economic data
- Application of simple economic models

The subject matter of the Principles of Microeconomics examination is drawn from the following topics. The percentages next to the main topics indicate the approximate percentage of exam questions on that topic.

I. **Basic Economic Concepts (8%–14%)**
   A. Scarcity, choice and opportunity costs
   B. Production possibilities curve
   C. Comparative advantage, specialization and trade
   D. Economic systems
   E. Property rights and the role of incentives
   F. Marginal analysis

II. **The Nature and Functions of Product Markets (55%–70%)**
   A. Supply and demand (15%–20%)
      1. Market equilibrium
      2. Determinants of supply and demand
      3. Price and quantity controls
      4. Elasticity
         a. Price, income and cross-price elasticities of demand
         b. Price elasticity of supply
      5. Consumer surplus, producer surplus and market efficiency
      6. Tax incidence and deadweight loss
   B. Theory of consumer choice (5%–10%)
      1. Total utility and marginal utility
      2. Utility maximization: equalizing marginal utility per dollar
      3. Individual and market demand curves
      4. Income and substitution effects
   C. Production and costs (10%–15%)
      1. Production functions: short and long run
      2. Marginal product and diminishing returns
      3. Short-run costs
      4. Long-run costs and economies of scale
      5. Cost minimizing input combination

D. Firm behavior and market structure
   (23%–33%)
   1. Profit:
      a. Accounting versus economic profits
      b. Normal profit
      c. Profit maximization: MR=MC rule
   2. Perfect competition
      a. Profit maximization
      b. Short-run supply and shut-down
         decision
      c. Firm and market behaviors in
         short-run and long-run equilibria
      d. Efficiency and perfect competition
   3. Monopoly
      a. Sources of market power
      b. Profit maximization
      c. Inefficiency of monopoly
      d. Price discrimination
   4. Oligopoly
      a. Interdependence, collusion and
         cartels
      b. Game theory and strategic behavior
   5. Monopolistic competition
      a. Product differentiation and role of
         advertising
      b. Profit maximization
      c. Short-run and long-run equilibrium
      d. Excess capacity and inefficiency

III. **Factor Markets (8%–14%)**
   A. Derived factor demand
   B. Marginal revenue product
   C. Labor market and firms' hiring of labor
   D. Market distribution of income

IV. **Market Failure and the Role of Government
   (10%–16%)**
   A. Externalities
      1. Marginal social benefit and marginal
         social cost
      2. Positive externalities
      3. Negative externalities
      4. Remedies
   B. Public goods
      1. Public versus private goods
      2. Provision of public goods
   C. Public policy to promote competition
      1. Antitrust policy
      2. Regulation
   D. Income distribution
      1. Equity
      2. Sources of income inequality

Sample Test Questions

The following sample questions do not appear on an actual CLEP examination. They are intended to give potential test-takers an indication of the format and difficulty level of the examination and to provide content for practice and review. Knowing the correct answers to all of the sample questions is not a guarantee of satisfactory performance on the exam.

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

1. Which of the following best states the law of comparative advantage?

   (A) Differences in relative costs of production are the key to determining patterns of trade.
   (B) Differences in absolute costs of production determine which goods should be traded between nations.
   (C) Tariffs and quotas are beneficial in increasing international competitiveness.
   (D) Nations should not specialize in the production of goods and services.
   (E) Two nations will not trade if one is more efficient than the other in the production of all goods.

2. Which of the following is true about accounting and economic profits?

   (A) A firm that earns an accounting profit necessarily earns an economic profit.
   (B) A firm that earns an economic profit necessarily earns an accounting profit.
   (C) Economic profits and accounting profits are equal in the short run.
   (D) Accounting profits count only variable costs, but economic profits count both fixed and variable costs.
   (E) Accounting profits count both fixed and variable costs, but economic profits count only variable costs.

3. Assume that an economy produces two goods, consumer goods and military goods. If it were possible to increase the output of both military goods and consumption goods, which of the following statements about the economy would be true?

   (A) The economy is inefficient and is producing inside the production possibilities curve.
   (B) The economy is inefficient and is producing on the production possibilities curve.
   (C) The economy is efficient and is producing on the production possibilities curve.
   (D) The economy is efficient and is producing inside the production possibilities curve.
   (E) The economy is efficient and is producing outside the production possibilities curve.

4. Which of the following would necessarily cause a decrease in the price of a product?

   (A) An increase in the number of buyers and a decrease in the price of an input
   (B) An increase in the number of buyers and a decrease in the number of firms producing the product
   (C) An increase in average income and an improvement in production technology
   (D) A decrease in the price of a substitute product and an improvement in production technology
   (E) A decrease in the price of a substitute product and an increase in the price of an input

5. An effective price floor will most likely result in

   (A) shortages of products if the price floor is above the equilibrium price
   (B) shortages of products if the price floor is at the equilibrium price
   (C) surpluses of products if the price floor is above the equilibrium price
   (D) surpluses of products if the price floor is below the equilibrium price
   (E) a balance between quantity demanded and quantity supplied if the price floor is above the equilibrium price

6. Jenna spends all of her weekly income on food and entertainment. If the marginal utility of the last dollar Jenna spends on food is greater than the marginal utility of the last dollar she spends on entertainment, what should Jenna do to maximize utility?

   (A) She should do nothing; utility is already maximized.
   (B) She should purchase more food and less entertainment.
   (C) She should purchase less food and more entertainment.
   (D) She should purchase more of both food and entertainment.
   (E) She should purchase less of both food and entertainment.

7. Assume that a consumer finds that her total expenditure on compact discs stays the same after the price of compact discs declines. Which of the following is true for this consumer over the price range?

   (A) Compact discs are inferior goods.
   (B) The consumer's demand for compact discs increased.
   (C) The consumer's demand for compact discs is perfectly price elastic.
   (D) The consumer's demand for compact discs is perfectly price inelastic.
   (E) The consumer's demand for compact discs is unit price elastic.

8. An improvement in production technology for a certain good leads to

   (A) an increase in the demand for the good
   (B) an increase in the supply of the good
   (C) an increase in the price of the good
   (D) a shortage of the good
   (E) a surplus of the good

9. If the demand for a product is price elastic, which of the following is true?

   (A) An increase in the product price will have no effect on the firm's total revenue.
   (B) An increase in the product price will increase the firm's total revenue.
   (C) A decrease in the product price will increase the firm's total revenue.
   (D) A decrease in the product price will decrease the firm's rate of inventory turnover.
   (E) A decrease in the product price will decrease the total cost of goods sold.

10. If an increase in the price of good X causes a decrease in the demand for good Y, good Y is

   (A) an inferior good
   (B) a luxury good
   (C) a necessary good
   (D) a substitute for good X
   (E) a complement to good X

11. The price elasticity of demand for product X is equal to –2. If the price of product X increases by 10 percent, which of the following will occur?

   (A) The quantity demanded for product X will decrease by 20%.
   (B) The quantity demanded for product X will decrease by 5%.
   (C) The firm's total revenue will increase by 10%.
   (D) The firm's total revenue will increase by 20%.
   (E) The demand for product X will decrease by 5%.

12. An increase in the price of a good decreases purchasing power, causing a decrease in the quantity of the good demanded. The decrease in the quantity demanded is due to

    (A) the income effect
    (B) the substitution effect
    (C) a decrease in consumer surplus
    (D) a decrease in supply
    (E) a shortage of the good

13. To reduce the amount of negative externality arising from the production of some goods, the government can

    (A) impose a tariff on imports
    (B) impose a price floor below the market equilibrium price
    (C) impose a price ceiling above the market equilibrium price
    (D) grant a corrective subsidy to producers to increase production
    (E) impose a corrective tax on producers to decrease production

14. The primary distinction between the short run and the long run is that in the short run

    (A) firms make profits, but in the long run no firm makes economic profits
    (B) profits are maximized, but in the long run all costs are maximized
    (C) some costs of production are fixed, but in the long run all costs are fixed
    (D) some costs of production are fixed, but in the long run all costs are variable
    (E) marginal costs are rising, but in the long run they are constant

Questions 15–16 are based on the table below, which shows a firm's total cost for different levels of output.
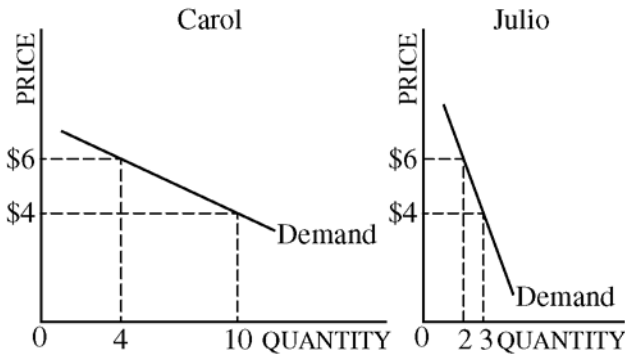
Output	Total Cost
0	$24
1	33
2	41
3	48
4	54
5	61
6	69

15. Which of the following is the firm's marginal cost of producing the fourth unit of output?

    (A) $54.00
    (B) $13.50
    (C) $ 7.50
    (D) $ 6.00
    (E) $ 1.50

16. Which of the following is the firm's average total cost of producing 3 units of output?

    (A) $48.00
    (B) $16.00
    (C) $14.00
    (D) $13.50
    (E) $ 7.00

Carol

Julio

17. Assume that there are only two buyers in the market for a comic magazine, Carol and Julio. The graphs above show their individual demand curves. Which of the following quantity and price combinations is on the market demand curve?

(A) 6, $4
(B) 10, $4
(C) 13, $4
(D) 12, $6
(E) 15, $6

18. Marginal revenue is the change in revenue that results from a one-unit increase in the

(A) variable input
(B) variable input price
(C) output level
(D) output price
(E) fixed cost

19. In the short run, if the product price of a perfectly competitive firm is less than the minimum average variable cost, the firm will

(A) raise its price
(B) increase its output
(C) decrease its output slightly but increase its profit margin
(D) incur larger losses by continuing to produce than by shutting down
(E) incur smaller losses by continuing to produce than by shutting down

20. Suppose that each business needs a license to operate in a city. The license fee increases from $400 per year to $500 per year. What effect will this increase have on a firm's short-run costs?

	Marginal Cost	Average Total Cost	Average Variable Cost
(A)	Increase	Increase	Increase
(B)	Increase	Increase	No effect
(C)	No effect	No effect	No effect
(D)	No effect	Increase	Increase
(E)	No effect	Increase	No effect

21. Which of the following statements is true of perfectly competitive firms in long-run equilibrium?

(A) Firm revenues will decrease if production is increased.
(B) Total firm revenues are at a maximum.
(C) Average fixed cost equals marginal cost.
(D) Average total cost is at a minimum.
(E) Average variable cost is greater than marginal cost.

22. An industry has been dumping its toxic waste free of charge into a river. A government action to ensure a more efficient use of resources would have which of the following effects on the industry's output and product price?

	Output	Price
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Increase	Decrease
(D)	Increase	Increase
(E)	Increase	No change

23. Assume that a perfectly competitive industry is in long-run equilibrium. A permanent increase in demand will eventually result in

   (A) a decrease in demand because the price will increase and people will buy less of the output
   (B) a decrease in supply because the rate of output and the associated cost will both increase
   (C) an increase in price but no increase in output
   (D) an increase in output
   (E) a permanent shortage, since the quantity demanded is now greater than the quantity supplied

24. Differences in which of the following are NOT used to explain wage differentials among workers?

   (A) Talent
   (B) Experience
   (C) Human capital
   (D) Consumer spending
   (E) Discrimination in the job market

25. Which of the following statements must be true in a perfectly competitive market?

   (A) A firm's marginal revenue equals price.
   (B) A firm's average total cost is above price in the long run.
   (C) A firm's average fixed cost rises in the short run.
   (D) A firm's average variable cost is higher than price in the long run.
   (E) Large firms have lower total costs than small firms.

26. A perfectly competitive firm produces in an industry whose product sells at a market price of $100. At the firm's current rate of production, marginal cost is increasing and is equal to $110. To maximize its profits, the firm should change its output and price in which of the following ways?

Output	Price
(A) Decrease	Increase
(B) Decrease	No change
(C) No change	Increase
(D) Increase	No change
(E) Increase	Decrease

27. The typical firm in a monopolistically competitive industry earns zero economic profit in long-run equilibrium because

   (A) advertising costs make monopolistic competition a high-cost market structure rather than a low-cost market structure
   (B) there are no close substitutes for each firm's product
   (C) there are no significant restrictions on entering or exiting the industry
   (D) the firms in the industry are unable to engage in product differentiation
   (E) the firms in the industry do not operate at the minimum point on their long-run average cost curves

28. In the long run, compared with a perfectly competitive firm, a monopolistically competitive firm with the same costs will have

   (A) a higher price and higher output
   (B) a higher price and lower output
   (C) a lower price and higher output
   (D) a lower price and lower output
   (E) the same price and lower output

29. Which of the following describes what will happen to market price and quantity if firms in an oligopolistic market form a cartel?

	Price	Quantity
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Increase	Increase
(D)	Increase	Decrease
(E)	Increase	No change
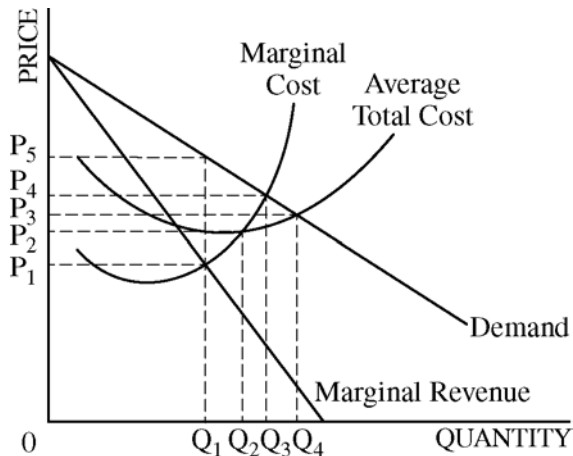
30. The diagram above shows the cost and revenue curves for a monopolist. What are the profit-maximizing output and price?

	Output	Price
(A)	0	P_1
(B)	Q_1	P_5
(C)	Q_2	P_2
(D)	Q_3	P_4
(E)	Q_4	P_3

31. Imperfectly competitive firms may be allocatively inefficient because they produce at a level of output such that

(A) average cost is at a minimum

(B) marginal revenue is greater than marginal cost

(C) price equals marginal revenue

(D) price equals marginal cost

(E) price is greater than marginal cost

32. In a market economy, public goods are unlikely to be provided in sufficient quantity by the private sector because

(A) private firms are less efficient at producing public goods than is the government

(B) the use of public goods cannot be withheld from those who do not pay for them

(C) consumers lack information about the benefits of public goods

(D) consumers do not value public goods highly enough for firms to produce them profitably

(E) public goods are inherently too important to be left to private firms to produce

33. Assume that both input and product markets are competitive. If capital is fixed and the product price increases, in the short run firms will increase production by increasing

(A) capital until marginal revenue equals the product price

(B) capital until the average product of capital equals the price of capital

(C) labor until the value of the marginal product of labor equals the wage rate

(D) labor until the marginal product of labor equals the wage rate

(E) labor until the ratio of product price to the marginal product of labor equals the wage rate

34. Which of the following is an important attribute of a market economy?

    (A) Equal distribution of income
    (B) Collective ownership of resources
    (C) Centralized economic decision making
    (D) Protection of property rights
    (E) Public provision of all goods and services

35. If hiring an additional worker would increase a firm's total cost by less than it would increase its total revenue, the firm should

    (A) not hire that worker
    (B) hire that worker
    (C) hire that worker only if another worker leaves or is fired
    (D) hire that worker only if the worker can raise the firm's productivity
    (E) reduce the number of workers employed by that firm

36. If a firm wants to produce a given amount of output at the lowest possible cost, it should use resources in such a manner that

    (A) it uses relatively more of the less expensive resource
    (B) it uses relatively more of the resource with the highest marginal product
    (C) each resource has just reached the point of diminishing marginal returns
    (D) the marginal products of each resource are equal
    (E) the marginal products per dollar spent on each resource are equal

37. If the firms in an industry pollute the environment and are not charged for the pollution, which of the following is true from the standpoint of the efficient use of resources?

    (A) Too much of the industry's product is produced, and the price of the product is higher than the marginal social cost.
    (B) Too much of the industry's product is produced, and the price of the product is lower than the marginal social cost.
    (C) Too little of the industry's product is produced, and the price of the product is higher than the marginal social cost.
    (D) Too little of the industry's product is produced, and the price of the product is lower than the marginal social cost.
    (E) The industry is a monopoly.

38. Using equal amounts of resources, Country A can produce either 30 tons of mangoes or 10 tons of bananas, and Country B can produce either 10 tons of mangoes or 6 tons of bananas. Which of the following is consistent with the information above?

	Country A	Country B
(A)	Comparative advantage in mango production	Comparative advantage in banana production
(B)	Comparative advantage in banana production	Comparative advantage in mango production
(C)	Absolute advantage in mango production	Absolute advantage in banana production
(D)	Absolute advantage in banana production	Absolute advantage in mango production
(E)	Comparative advantage in banana production	Absolute advantage in mango production
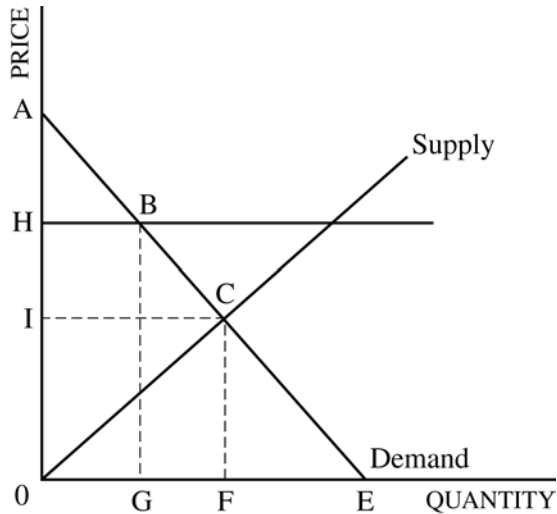
39. The graph above shows the market for chocolates. Suppose that the government imposes a price floor equal to 0H. As a result, consumer surplus in this market will be equal to

(A) ABH
(B) ACI
(C) AE0
(D) 0CE
(E) 0IC

40. A firm in monopolistic competition CANNOT do which of the following?

(A) Earn short-run profits
(B) Advertise its product
(C) Prevent new firms from entering the market
(D) Compete by its choice of location
(E) Set the price for its product

41. Which of the following is a necessary condition for a firm to engage in price discrimination?

(A) The firm faces a highly elastic demand.
(B) The firm is able to set its own price.
(C) The firm is maximizing its revenue.
(D) Buyers are only concerned about product quality.
(E) Buyers are not fully informed about price.

42. Which of the following is true if total utility is maximized?

(A) Marginal utility is equal to zero.
(B) Marginal utility is positive.
(C) Marginal utility is negative.
(D) Average utility is maximized.
(E) Average utility is minimized.

43. If the cross-price elasticity of demand between good A and good B is negative, then good A and good B are

(A) substitutes
(B) complements
(C) unrelated
(D) in high demand
(E) in low demand

44. Assume that a firm in a certain industry hires its workers in a perfectly competitive labor market. As the firm hires additional workers, the marginal factor cost is

(A) decreasing steadily
(B) increasing steadily
(C) constant
(D) decreasing at first, then increasing
(E) increasing at first, then decreasing

45. A profit-maximizing monopolist will hire an input up to the point at which

(A) marginal factor cost equals marginal revenue product
(B) marginal factor cost equals marginal revenue
(C) average factor cost equals average revenue product
(D) average factor cost equals value of the marginal product
(E) average revenue equals marginal revenue

	Firm B's Choice	
	Restrict Output	Do not Resrict Output
Firm A's Choice — Restrict Output	$50, $50	$10, $80
Firm A's Choice — Do not Restrict Output	$80, $10	$30, $30

46. The pay-off matrix above gives the profits associated with the strategic choices of two oligopolistic firms. The first entry in each cell is the profit to Firm A and the second to Firm B. Suppose that Firm A and Firm B agree to restrict output but have no power to enforce that agreement. In the long run, each firm will most likely earn which of the following profits?

	Firm A	Firm B
(A)	$10	$80
(B)	$30	$30
(C)	$50	$50
(D)	$80	$10
(E)	$80	$80
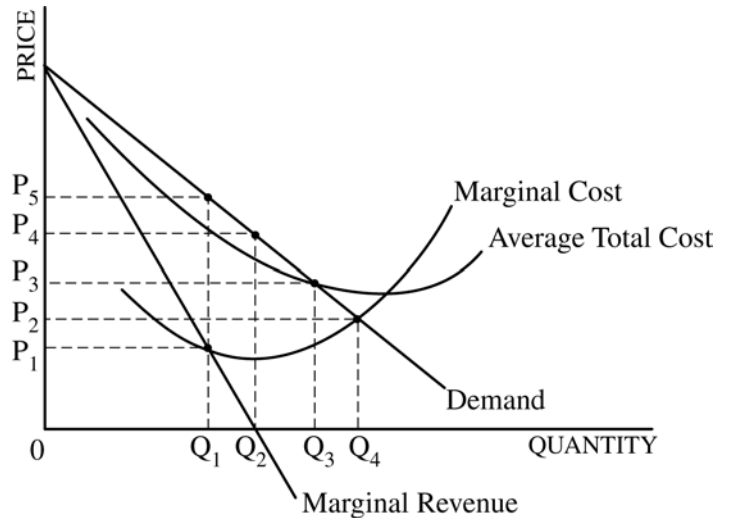
47. Suppose that the natural monopolist whose cost and revenue curves are depicted above is subject to government regulation. If the government's objective is to make this monopoly produce the socially optimal level of output, it should set price equal to

(A) P_1
(B) P_2
(C) P_3
(D) P_4
(E) P_5

48. A production possibilities curve can be used to show which of the following?

(A) Absence of trade-offs in the production of goods
(B) The limits on production due to scarcity of resources
(C) The amount of investment spending necessary to reach full employment
(D) The labor-force participation rate
(E) The average productivity of resources

16

49. A firm's short-run total costs increase from $45 to $55 when it increases its production from one unit to two units. Which of the following is true if the total fixed cost is $30 ?

(A) The average total cost of producing two units is equal to $47.50.

(B) Fixed costs of production remain at $30 at zero units of output.

(C) The marginal cost of producing the first unit is $10.

(D) Economic profit will be maximized when costs are minimized at $30.

(E) Total variable cost is equal to $15 when two units are produced.

50. Which of the following will cause the supply of chocolate to increase?

(A) An increase in the price of cocoa butter, a by-product of the production of chocolate

(B) An increase in the price of chocolate

(C) An increase in the price of cocoa beans, a major input in the production of chocolate

(D) A decrease in the price of butterscotch, a substitute for chocolate

(E) An effective price ceiling in the market for chocolate

51. In long-run equilibrium, the price charged by a monopolistically competitive firm is

(A) greater than its average total cost but equal to its marginal cost

(B) less than its average total cost but equal to its marginal cost

(C) equal to its average total cost but less than its marginal cost

(D) equal to its average revenue but less than its average total cost

(E) equal to its average total cost but greater than its marginal cost

52. Economists call a firm's demand for labor a derived demand because

(A) the number of workers hired depends mainly on the demand for the product the workers produce

(B) workers must be at least sixteen years old before they are considered part of the labor force

(C) workers need the salaries they receive from firms to demand goods and services

(D) the federal government taxes workers to derive revenues needed to finance its budget

(E) the firm needs skilled workers to operate its equipment
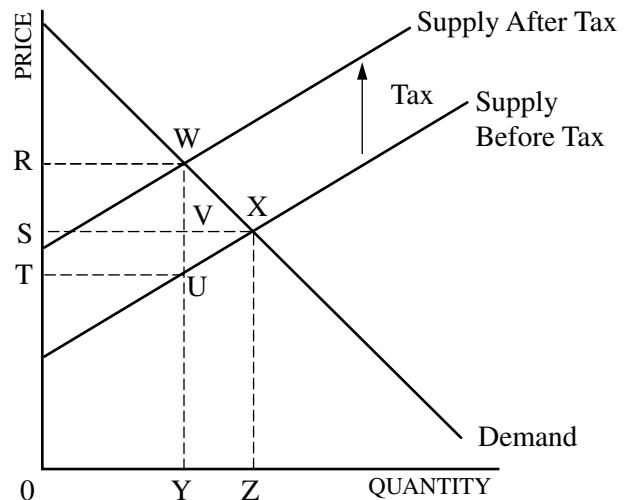
53. The imposition of an excise tax by the government caused the supply curve to shift as shown in the diagram above. Which area on the diagram represents the deadweight loss caused by the tax?

(A) UWX

(B) VWX

(C) RSXW

(D) STUV

(E) UXZY

54. Which of the following causes an increase in the demand for labor?

(A) An increase in the wage rate
(B) An increase in the price of the good that labor is producing
(C) A decrease in the marginal product of labor
(D) A decrease in the demand for the good that labor is producing
(E) A decrease in the price of capital, a substitute for labor

55. The United States government uses antitrust laws to regulate private markets to

(A) promote a competitive market environment
(B) limit business profits
(C) decrease the tax burden on consumers
(D) increase government revenue from penalty payments
(E) shelter small businesses from foreign competition

56. Which of the following is true of a pure public good?

(A) The government provides it at zero cost.
(B) Nonpaying users can be excluded from consuming it.
(C) People willingly reveal their true preference for it.
(D) It is difficult to determine a person's marginal valuation of it.
(E) One person's consumption of it reduces its availability to others.

57. Average total cost is equal to the sum of

(A) total fixed cost and total variable cost
(B) marginal cost and average fixed cost
(C) average fixed cost and average variable cost
(D) marginal cost and average variable cost
(E) marginal cost, average fixed cost, and average variable cost

58. Compared to a perfectly competitive industry, a profit-maximizing monopoly with identical costs of production will produce

(A) a lower quantity of output and charge a higher price
(B) a higher quantity of output and charge a lower price
(C) a lower quantity of output and charge a lower price
(D) a higher quantity of output and charge a higher price
(E) the same quantity of output and charge a higher price

59. A production possibilities curve is typically bowed outward because of the

(A) law of demand
(B) law of increasing opportunity costs
(C) substitution effect
(D) income effect
(E) principle of comparative advantage

60. A firm is currently producing at a level of output where marginal cost is increasing and greater than average variable cost, and marginal revenue is greater than marginal cost. To maximize profits, this firm should

(A) decrease output
(B) increase output
(C) maintain its current output level
(D) shut down
(E) increase its price

Questions 61 and 62 refer to a firm's production function given in the table below. Assume that the firm uses labor as the only variable input to produce its output.

Number of Workers Hired	Output per Day (units)
0	0
1	15
2	32
3	42
4	50
5	55

61. If the market wage rate is constant no matter how many workers are hired, the marginal cost of the firm is minimized with the hiring of the

    (A) first worker
    (B) second worker
    (C) third worker
    (D) fourth worker
    (E) fifth worker

62. If the total fixed cost is $50 and each worker receives a wage of $100 per day, then the total cost and the average variable cost of producing 50 units of output are which of the following?

	Total Cost	Average Variable Cost
(A)	$550	$10
(B)	$550	$ 8
(C)	$450	$10
(D)	$450	$ 8
(E)	$150	$ 2

Questions 63 and 64 refer to the graph below, which shows the cost and output of a perfectly competitive firm.
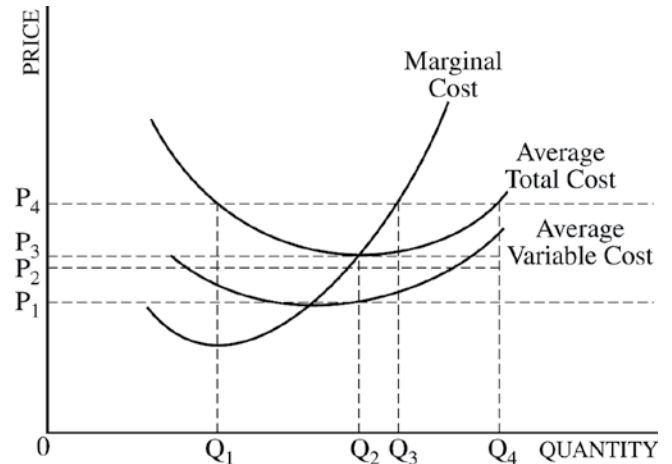
63. If the market price is P_4, the production of which output level will maximize the firm's profit?

    (A) Q_1
    (B) Q_2
    (C) Q_3
    (D) Q_4
    (E) 0

64. If the market price is P_2, then which of the following is true?

    (A) The firm will earn positive economic profits.
    (B) The firm will shut down and exit the industry in the short run.
    (C) The firm will be in long-run equilibrium.
    (D) The firm will operate at a loss and continue to produce in the short run.
    (E) The firm will lower its price to increase sales and profit.

65. Suppose that the price elasticity of demand for gasoline is –0.1 in the short run and –0.6 in the long run. If the price of gasoline increases by 60 percent, which of the following shows the percentage change in the quantity demanded of gasoline in the short run and in the long run?

	In the Short Run	In the Long Run
(A)	Increases by 10%	Increases by 60%
(B)	Increases by 6%	Decreases by 36%
(C)	Decreases by 6%	Decreases by 6%
(D)	Decreases by 6%	Decreases by 36%
(E)	Decreases by 10%	Decreases by 60%

Quantity of X	Marginal Utility of X	Quantity of Y	Marginal Utility of Y
1	16	1	40
2	12	2	24
3	10	3	16
4	8	4	12
5	6	5	8
6	4	6	4

66. The table above shows the marginal utilities in utils that Samantha receives from purchasing good X and good Y each week. The price of good X is $2 per unit, and the price of good Y is $4 per unit. Samantha has an income of $26 per week, and she spends it all on the two goods each week.

If Samantha maximizes her utility, what combination of good X and good Y will she purchase?

	Good X	Good Y
(A)	1	6
(B)	2	4
(C)	3	5
(D)	5	4
(E)	6	5

67. If a firm experiences economies of scale in production, its long-run average total cost curve

(A) rises as output increases

(B) falls as output increases

(C) is horizontal

(D) is the same as its marginal cost curve

(E) lies above the short-run average total cost curve

68. A perfectly competitive firm's short-run supply curve is

(A) downward sloping

(B) horizontal at the market price

(C) the rising portion of its average variable cost curve above its marginal cost curve

(D) the rising portion of its average total cost curve above its marginal cost curve

(E) the rising portion of its marginal cost curve above its average variable cost curve

69. Which of the following costs continuously decrease as a firm's output increases?

(A) Short-run average total cost

(B) Long-run average total cost

(C) Average variable cost

(D) Average fixed cost

(E) Marginal cost

70. The Lorenz curve is a useful method for studying

(A) the extent of poverty in an economy

(B) inequality in the distribution of income

(C) the extent of job losses because of free trade

(D) the opportunity cost of investing in human capital

(E) settlement patterns of families in a geographic region

71. Suppose that the government decides to impose a 10 percent excise tax on all sugar-based soft drinks. Under which of the following scenarios will buyers pay the LEAST amount of this tax?

Demand	Supply
(A) Elastic	Elastic
(B) Elastic	Inelastic
(C) Perfectly inelastic	Perfectly elastic
(D) Inelastic	Elastic
(E) Inelastic	Inelastic

72. If a nationwide automobile workers' union successfully negotiates for a wage increase in its new labor contract, this will most likely cause

(A) the demand curve for automobiles to shift to the left
(B) the demand curve for automobiles to shift to the right
(C) the equilibrium price of automobiles to fall
(D) the equilibrium price of automobiles to rise
(E) the supply curve for automobiles to shift to the right

73. If negative externalities exist in an industry when producing a good, which of the following must be true?

(A) Firms in the industry can earn only normal profits.
(B) The industry underallocates resources to the production of the good.
(C) Firms in the industry ignore their marginal private costs in choosing their output levels.
(D) The market price fails to reflect the full cost of production.
(E) The industry needs a government subsidy to produce the efficient level of output.

Output	Total Cost
0	200
1	300
2	410
3	530
4	660
5	800
6	950

74. Given the information in the table above, what are the average fixed cost and average variable cost for 4 units of output?

(A) The average fixed cost is 200 and the average variable cost is 165.
(B) The average fixed cost is 200 and the average variable cost is 115.
(C) The average fixed cost is 50 and the average variable cost is 115.
(D) The average fixed cost is 50 and the average variable cost is 165.
(E) They cannot be determined from the information given.

Output	Quantity of Labor
0	0
10	1
19	2
27	3
34	4
40	5

75. The table above shows output levels and corresponding quantities of labor for a perfectly competitive firm. What is the marginal physical product of the fifth worker?

(A) 5
(B) 6
(C) 7
(D) 8
(E) 40

76. A perfectly competitive firm will shut down rather than produce if its

    (A) average total cost exceeds its average variable cost
    (B) loss is greater than its fixed cost
    (C) marginal revenue is less than the market price
    (D) economic profit is equal to zero
    (E) marginal cost curve is starting to rise

77. Which of the following best explains the reason for a downward-sloping demand curve for a product?

    (A) The income and substitution effects are equal and opposite.
    (B) Total utility eventually falls below marginal utility as additional units of the product are consumed.
    (C) The average utility falls below the marginal utility as additional units of the product are consumed.
    (D) The marginal utility decreases as additional units of the product are consumed.
    (E) Average utility is always decreasing.

78. In the absence of market failure, the competitive market in equilibrium is

    (A) efficient and maximizes the sum of consumer and producer surpluses
    (B) efficient and maximizes consumer surplus
    (C) efficient and maximizes producer surplus
    (D) inefficient, since it serves consumers who are willing to pay
    (E) inefficient, since producers with the lowest costs remain in the market

79. Which of the following factors would lead one to conclude that an electric utility company is a natural monopoly?

    (A) Constant returns to scale make it cheaper for a single firm to produce than for multiple firms to produce.
    (B) Diseconomies of scale make it cheaper for a single firm to produce than for multiple firms to produce.
    (C) Economies of scale make it cheaper for a single firm to produce than for multiple firms to produce.
    (D) High start-up costs are fixed and not factored in determining monopoly power.
    (E) The firm is not subject to returns to scale.

80. What type of labor market is characterized by a single employer of labor with significant hiring power?

    (A) Collective monopoly
    (B) Union shop
    (C) Monopsony
    (D) Labor oligopoly
    (E) Nonrivalry market

Study Resources

Most textbooks used in college-level introductory microeconomics courses cover the topics in the outline given earlier, but the approaches to certain topics and the emphases given to them may differ. To prepare for the Principles of Microeconomics exam, it is advisable to study one or more college textbooks, which can be found in most college bookstores. When selecting a textbook, check the table of contents against the knowledge and skills required for this test.

There are many introductory economics textbooks that vary greatly in difficulty. Most books are published in one-volume editions, which cover both microeconomics and macroeconomics; some are published in two-volume editions, with one volume covering macroeconomics and the other microeconomics. A companion study guide/workbook is available for most textbooks. The study guides typically include brief reviews, definitions of key concepts, problem sets and multiple-choice test questions with answers. Many publishers also make available companion websites, links to other online resources, or computer-assisted learning packages.

To broaden your knowledge of economic issues, you may read relevant articles published in the economics periodicals that are available in most college libraries — for example, *The Economist*, *The Wall Street Journal* and the *New York Times*, along with local papers, may also enhance your understanding of economic issues.

Visit clep.collegeboard.org/test-preparation for additional microeconomics resources. You can also find suggestions for exam preparation in Chapter IV of the *Official Study Guide*. In addition, many college faculty post their course materials on their schools' websites.

Answer Key

1.	A		41.	B
2.	B		42.	A
3.	A		43.	B
4.	D		44.	C
5.	C		45.	A
6.	B		46.	B
7.	E		47.	B
8.	B		48.	B
9.	C		49.	B
10.	E		50.	A
11.	A		51.	E
12.	A		52.	A
13.	E		53.	A
14.	D		54.	B
15.	D		55.	A
16.	B		56.	D
17.	C		57.	C
18.	C		58.	A
19.	D		59.	B
20.	E		60.	B
21.	D		61.	B
22.	B		62.	D
23.	D		63.	C
24.	D		64.	D
25.	A		65.	D
26.	B		66.	D
27.	C		67.	B
28.	B		68.	E
29.	D		69.	D
30.	B		70.	B
31.	E		71.	B
32.	B		72.	D
33.	C		73.	D
34.	D		74.	C
35.	B		75.	B
36.	E		76.	B
37.	B		77.	D
38.	A		78.	A
39.	A		79.	C
40.	C		80.	C

Test Measurement Overview

Format

There are multiple forms of the computer-based test, each containing a predetermined set of scored questions. The examinations are not adaptive. There may be some overlap between different forms of a test: any of the forms may have a few questions, many questions, or no questions in common. Some overlap may be necessary for statistical reasons.

In the computer-based test, not all questions contribute to the candidate's score. Some of the questions presented to the candidate are being pretested for use in future editions of the tests and will not count toward his or her score.

Scoring Information

CLEP examinations are scored without a penalty for incorrect guessing. The candidate's raw score is simply the number of questions answered correctly. However, this raw score is not reported; the raw scores are translated into a scaled score by a process that adjusts for differences in the difficulty of the questions on the various forms of the test.

Scaled Scores

The scaled scores are reported on a scale of 20–80. Because the different forms of the tests are not always exactly equal in difficulty, raw-to-scale conversions may in some cases differ from form to form. The easier a form is judged to be, the higher the raw score required to attain a given scaled score. **Table 1** indicates the relationship between number correct (raw score) and scaled score across all forms.

The Recommended Credit-Granting Score

Table 1 also indicates the recommended credit-granting score, which represents the performance of students earning a grade of C in the corresponding course. The recommended B-level score represents B-level performance in equivalent course work. These scores were established as the result of a Standard Setting Study, the most recent having been conducted in 2005. The recommended credit-granting scores are based upon the judgments of a panel of experts currently teaching equivalent courses at various colleges and universities. These experts evaluate each question in order to determine the raw scores that would correspond to B and C levels of performance. Their judgments are then reviewed by a test development committee, which, in consultation with test content and psychometric specialists, makes a final determination. The standard-setting study is described more fully in the earlier section entitled "CLEP Credit Granting" on page 5.

Panel members participating in the most recent study were:

Stephen Baker	Capital University
Richard Brunelle	Fitchburg State College
Charles Callahan	SUNY Brockport
Kelly Chaston	Davidson College
Paul Copley	Lewis and Clark College
George Davis	Lincoln Memorial University
Eric Dodge	Hanover College
Abdelaziz Farah	SUNY Orange
Tammy Feldman	Carleton College
Patricia Herrmann	Coastal Bend College
Miren Ivankovic	Southern Wesleyan University
Jean Kiekel	McPherson College
Michael Kimmitt	University of Hawaii at Manoa
Andrew Kohen	James Madison University
Jessica McCraw	Texas Christian University
Diego Mendez-Carbaj	Illinois Wesleyan University
Lawrence Moore	Potomac State College
Odili Onianwa	Alabama A & M University
Gregory Rabb	Jamestown Community College
Denise Robson	University of Wisconsin — Oshkosh
Pamela Schmitt	United States Naval Academy
Kristin Vangaasbeck	California State University — Sacramento

After the recommended credit-granting scores are determined, a statistical procedure called scaling is applied to establish the exact correspondences between raw and scaled scores. Note that a scaled score of 50 is assigned to the raw score that corresponds to the recommended credit-granting score for C-level performance, and a high but usually less-than-perfect raw score is selected and assigned a scaled score of 80.

Table 1: Principles of Microeconomics
Interpretive Score Data
American Council on Education (ACE) Recommended Number of Semester Hours of Credit: 3

Course Grade	Scaled Score	Number Correct
	80	70
	79	69
	78	68
	77	67
	76	66
	75	65
	74	64
	73	63
	72	61-62
	71	60-61
	70	59-60
	69	58-59
	68	57-58
	67	56-57
	66	55-56
	65	54-55
B	**64**	**53-54**
	63	52-53
	62	51-52
	61	50-51
	60	49-50
	59	48-49
	58	47-48
	57	46-47
	56	45-46
	55	45
	54	44
	53	43
	52	42
	51	41
C	**50***	**40**
	49	39
	48	38
	47	37
	46	36
	45	35
	44	34
	43	33
	42	32
	41	31
	40	30
	39	29
	38	28
	37	27
	36	26
	35	25
	34	24
	33	23
	32	22
	31	21
	30	20
	29	19
	28	18
	27	17
	26	16
	25	15
	24	14
	23	13
	22	12
	21	11
	20	0-10

*Credit-granting score recommended by ACE.
Note: The number-correct scores for each scaled score on different forms may vary depending on form difficulty.

Validity

Validity is a characteristic of a particular use of the test scores of a group of examinees. If the scores are used to make inferences about the examinees' knowledge of a particular subject, the validity of the scores for that purpose is the extent to which those inferences can be trusted to be accurate.

One type of evidence for the validity of test scores is called content-related evidence of validity. It is usually based upon the judgments of a set of experts who evaluate the extent to which the content of the test is appropriate for the inferences to be made about the examinees' knowledge. The committee that developed the CLEP Principles of Microeconomics examination selected the content of the test to reflect the content of Principles of Microeconomics courses at most colleges, as determined by a curriculum survey. Since colleges differ somewhat in the content of the courses they offer, faculty members should, and are urged to, review the content outline and the sample questions to ensure that the test covers core content appropriate to the courses at their college.

Another type of evidence for test-score validity is called criterion-related evidence of validity. It consists of statistical evidence that examinees who score high on the test also do well on other measures of the knowledge or skills the test is being used to measure. Criterion-related evidence for the validity of CLEP scores can be obtained by studies comparing students' CLEP scores with the grades they received in corresponding classes, or other measures of achievement or ability. CLEP and the College Board conduct these studies, called Admitted Class Evaluation Service or ACES, for individual colleges that meet certain criteria at the college's request. Please contact CLEP for more information.

Reliability

The reliability of the test scores of a group of examinees is commonly described by two statistics: the reliability coefficient and the standard error of measurement (SEM). The reliability coefficient is the correlation between the scores those examinees get (or would get) on two independent replications of the measurement process. The reliability coefficient is intended to indicate the stability/consistency of the candidates' test scores, and is often expressed as a number ranging from .00 to 1.00. A value of .00 indicates total lack of stability, while a value of 1.00 indicates perfect stability. The reliability coefficient can be interpreted as the correlation between the scores examinees would earn on two forms of the test that had no questions in common.

Statisticians use an internal-consistency measure to calculate the reliability coefficients for the CLEP exam.[1] This involves looking at the statistical relationships among responses to individual multiple-choice questions to estimate the reliability of the total test score. The SEM is an estimate of the amount by which a typical test-taker's score differs from the average of the scores that a test-taker would have gotten on all possible editions of the test. It is expressed in score units of the test. Intervals extending one standard error above and below the true score for a test-taker will include 68 percent of that test-taker's obtained scores. Similarly, intervals extending two standard errors above and below the true score will include 95 percent of the test-taker's obtained scores. The standard error of measurement is inversely related to the reliability coefficient. If the reliability of the test were 1.00 (if it perfectly measured the candidate's knowledge), the standard error of measurement would be zero.

An additional index of reliability is the conditional standard of error of measurement (CSEM). Since different editions of this exam contain different questions, a test-taker's score would not be exactly the same on all possible editions of the exam. The CSEM indicates how much those scores would vary. It is the typical distance of those scores (all for the same test-taker) from their average. A test-taker's CSEM on a test cannot be computed, but by using the data from many test-takers, it can be estimated. The CSEM estimate reported here is for a test-taker whose average score, over all possible forms of the exam, would be equal to the recommended C-level credit-granting score.

Scores on the CLEP examination in Principles of Microeconomics are estimated to have a reliability coefficient of 0.91. The standard error of measurement is 3.53 scaled-score points. The conditional standard error of measurement at the recommended C-level credit-granting score is 3.87 scaled-score points.

---

[1]   The formula used is known as Kuder-Richardson 20, or KR-20, which is equivalent to a more general formula called coefficient alpha.