

Chapter 02 Economist's View of Behavior

Essay Questions

1. It is commonly believed that the best ways to motivate an employee are (1) to improve the quality of the workplace and (2) to make the employee feel like he/she is part of the company. How would an economist analyze these statements?

An economist would be skeptical about these claims. The economic model shows that people respond to incentives. The economic model implies that desired changes in employee behavior can be achieved by changing the relevant costs and benefits of actions by employees.

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Bloom's: Comprehension*

2. Wanda Weeks has decided to stay in a lower-paid position with a local electric company rather than accept a much higher-paying job with a new information technology company. Use a risk model to explain her decision.

Wanda is exhibiting risk-aversion. The risk model shows the trade-offs risk-averse individuals are willing to make between higher average salaries and greater variance in compensation. The more preferred job for a risk-averse individual is the job that offers the best package of both expected compensation and variance of compensation, not the position with the highest expected compensation.

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3. Contrast the "Good Citizen Model" with the "Economic Model" to explain the reason why people engage in charitable behavior.

The good citizen model views charitable behavior as the result of individuals placing the good of society ahead of their own well-being. The model assumes that if individuals knew how best to improve society they would choose to help others. The economic model holds that people engage in charitable behavior as part of their utility maximization given constraints. In contrast to the good citizen model, the economic model successfully predicts that charitable donations respond to changes in the cost of charitable donations created by changes in the tax code.

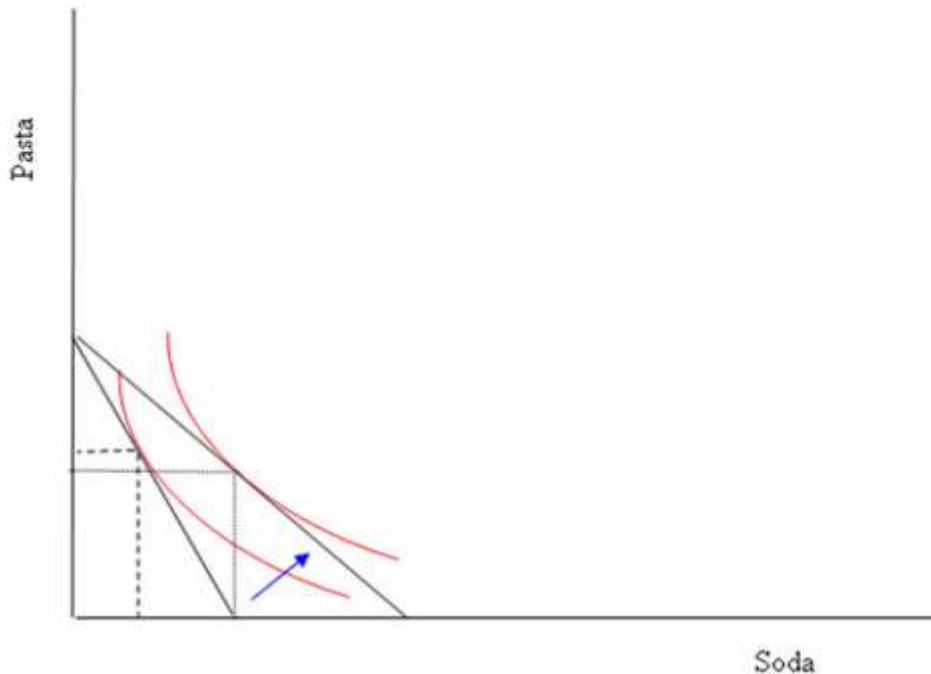
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4. Stella Ann Freeman is having a difficult time deciding whether or not to purchase a new car. How would understanding the concept of opportunity costs help her make a decision?

Opportunity cost is the value of what the best forgone alternative. The opportunity cost of purchasing a new car is the value of what is given up to purchase the car.

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5. Jim Range has to choose between buying more soda or more pasta for the week. He has a fixed income and he knows the prices of both products. Using indifference curves and budget constraint lines, illustrate the amount of soda and pasta that Jim will purchase. When he gets to the store, he finds the price of soda has fallen dramatically. How does this change his optimal purchase? Can a general rule of human behavior be developed from this graphical example?



The reduction in the price of soda pivots out his budget constraint. His new consumption bundle, containing a lot more soda is located on the better indifference curve above and to the right of his old best possible indifference curve. In response to a lower price he changes his behavior to buy more of the good with the lower relative price. Yes, people generally respond to the incentives given by prices. At lower prices consumers demand greater amounts. Depending on the location of the indifference curve, he may choose to consume more of both pasta and soda.

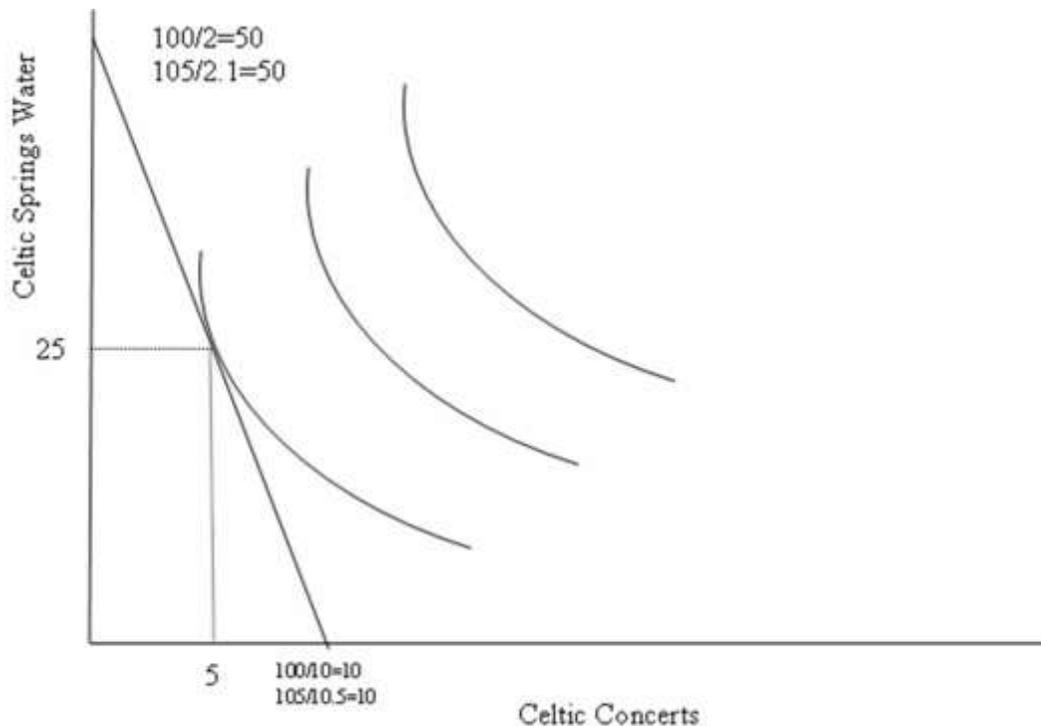
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6. Patrick consumes only two goods: Celtic Music concerts and Celtic Springs Water. Patrick earns \$100 per month at his part-time job in the library. The price of Celtic concerts is \$10. The price of Celtic Springs Water is \$2. Patrick currently goes to 5 Celtic concerts and consumes 25 bottles of Celtic Spring Water in a month.

(a) Draw Patrick's budget constraint and optimal consumption bundle. Please put Celtic concerts on the x-axis.

(b) In April Patrick receives a 5% pay increase. Inflation raises the price of concerts to \$10.50 and the price of Celtic Springs Water to \$2.10. Draw Patrick's new budget constraint and optimal consumption bundle. Please put Celtic concerts on the x-axis. How many Celtic concerts does he attend in April? How many bottles of water does he drink in April?

(a)



(b) His budget constraint does not change. The new vertical intercept of 50 waters is the same as the old vertical intercept of 50 waters. The new horizontal intercept of 10 concerts is the same as the old horizontal intercept of ten concerts. The relative price of Celtic concerts is always 5 bottles of Celtic Springs Water. He consumes 5 Celtic concerts and 25 bottles of Celtic Spring Water.

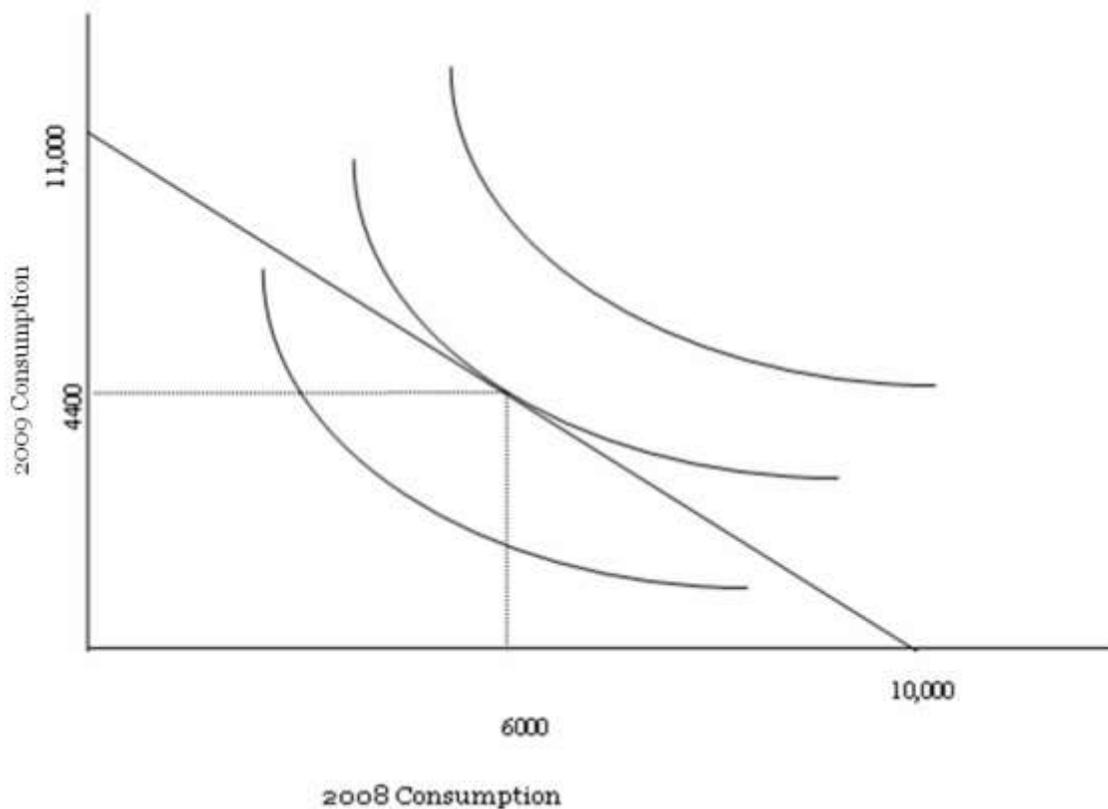
7. Ali inherits \$10,000 from his great-great aunt in 2008. His great-great aunt's will requires that Ali spend the money before December 31, 2009. He can spend the money on two consumption goods: consumption in 2008 or consumption in 2009. This is Ali's only source of money. The interest rate on loans or savings is ten percent.

- (a) How much could Ali spend in 2008 if he only consumes in 2008? How much could Ali spend in 2009 if he only consumes in 2009?
- (b) What is the opportunity cost of consuming \$1.00 in 2008, in terms of forgone consumption in 2009? Draw Ali's budget constraint and optimal consumption bundle. Please put 2008 consumption on the x-axis.
- (c) Ali decides to spend 6000 dollars on consumption in 2008 and 4400 dollars. Show this optimal consumption bundle using a budget constraint and indifference curve diagram.

(a) 10,000, $(1+0.10)*10,000=(1.10)*10,000=11,000$

(b) You give up \$1.10 in 2009 consumption for every dollar you spend in 2008.

(c)



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8. What is the relationship between the slope of the budget line to the notion of opportunity cost?

The slope of the budget line represents the opportunity cost of one good in terms of the other. Suppose we have two goods: fish and chips. If the price of fish (P_f) is \$2 and the price of chips (P_c) is \$8, then the price ratio $-P_c/P_f = -8/2 = -4$. This means that if I want one more unit of chips, I have to give up 4 more units of fish. So the opportunity cost of 1 unit of chips is given by the slope, -4, in terms of the number of fish that has to be given up.

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9. You have \$64 to spend on fish (F) and chips (C). Suppose the price per unit of fish (P_f) is \$8 and the price of chips (P_c) is \$2. Your utility function for fish and chips is given as

$$\sqrt{FC}$$

such that

$$MU_C = \frac{\sqrt{F}}{2\sqrt{C}}$$

and

$$MU_F = \frac{\sqrt{C}}{2\sqrt{F}}$$

are the marginal utilities of F and C. How many units of C and F should you buy to exhaust all income and maximize utility?

First note that to maximize utility, you have to be at equilibrium. This means, the following condition has to be satisfied:

$$\frac{MU_C}{P_C} = \frac{MU_F}{P_F}$$

It is better to write this as:

$$MU_C \cdot P_F = MU_F \cdot P_C$$

Now substitute the corresponding entities in the above expression:

$$\frac{\sqrt{F}}{2\sqrt{C}} \cdot \$8 = \frac{\sqrt{C}}{2\sqrt{F}} \cdot \$2$$

Cancelling the 2s in the denominator and cross-multiplying we get

$$C = 4 F$$

Now the second aspect of this is your income which is \$64, which has to be spent on F and C.

So your budget constraint should satisfy this condition:

$$64 = C P_c + F P_f \text{ or}$$

$$64 = C \cdot 2 + 8 F \text{ and now from the previous condition we have}$$

$$64 = (4 F) \cdot 2 + 8 F \text{ or}$$

$$F = 4 \text{ units}$$

$$C = 16 \text{ units and total utility is}$$

$$\sqrt{FC} = \sqrt{4 \times 16} = \sqrt{64} = 8$$

utils

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10. What does the tangency between an indifference curve and the budget line determine?

The point of tangency between the budget line and an indifference curve tells us that for a given income level, that point is the best combination for the consumer. That combination of goods is the one that will maximize utility given the income level. Since the budget line is straight, linear and downward sloping, its slope is the price-ratio and this represents the opportunity cost of one good in terms of the other. Now the indifference curve is convex to the origin, and the slope of the indifference curve is different at each point. Further, the slope of the indifference curve at any point can be found by drawing a tangent at that point. This slope tells us the subjective opportunity cost of the consumer, of one good in terms of the other. The point of tangency between the budget line and an indifference curve brings the two opportunity costs together and sets them equal to each other. Any other combination is hence inefficient from the consumer's point of view.

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Multiple Choice Questions

11. Assume Barbara likes driving fast, but hates getting injured. If Congress passes a law for mandatory airbags, Barbara is likely to experience an increased number of accidents. Why?

A. The benefits of driving faster increase.

B. The expected cost of being in an accident at any given speed decreases.

C. Barbara will defy the law and not have airbags, since she thinks no one is going to enforce it

D. Barbara is confident that she can drive flawless, since others will have airbags

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12. Assume that the quantity of CDs is measured on the horizontal axis, while the quantity of movie tickets is measured on the vertical axis. If available income decreases, then the new budget line:

- A. will have a smaller horizontal intercept, while keeping the same vertical intercept.
- B. will have a smaller vertical intercept, while keeping the same horizontal intercept.
- C.** will have a smaller vertical and horizontal intercept.
- D. will have a bigger vertical and horizontal intercept.

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13. Robert only consumes X and Y, and his indifference curves have the usual convex shape. Consider the consumption bundles (3, 9), (6, 6), and (9, 3) (hint: they lie on a straight line). If Robert is indifferent between (3, 9) and (9, 3), then:

- A. he prefers (3, 9) over (6, 6).
- B. he prefers (9, 3) over (6, 6).
- C.** he prefers (6, 6) over both (3, 9) and (9, 3).
- D. he prefers (6,6) over (3,9) but not over (9,3).

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14. Assume the quantity of X is measured on the horizontal axis, and the quantity of Y is measured on the vertical axis. Assume the price of X is \$3, and the price of Y is \$6. If Amanda has \$90 to spend on X and Y , then:

- A.** she can buy at most 30 X.
- B. her budget line has a slope of -2 .
- C. her budget line has a slope of -3 .
- D. she can buy at most 15 X.

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15. George likes skiing, and needs one pair of bindings for each pair of skis he owns. George's indifference curves for skis and bindings:

- A.** are approximately L-shaped.
- B. are straight lines.
- C. have a constant slope of -1 .
- D. are upward sloping

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16. ABC Corp. has a bonus plan in place for its CEO, linking her pay to annual earnings. ABC will pay her \$180,000 if earnings are high, \$90,000 if they are normal, and \$0 if they are low. Each event is estimated to have equal probability. Assume the CEO is indifferent between this bonus plan and receiving \$75,000 with certainty. Which of the following is true?

- A.** The CEO's expected bonus is \$90,000.
- B. The CEO is not willing to give up \$15,000 in expected bonuses in order to avoid the risky scheme.
- C. \$85,000 is the CEO's certainty equivalent for the current bonus plan.
- D. The CEO has no clue about risk management

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17. A risk-averse agent:

- A. only cares about expected payoff.
- B.** cares about expected payoff, as well as the variability of a payoff.
- C. only cares about the variability of a payoff.
- D. always prefers a certain payoff to a risky one.

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18. If employees conform to the economist's view of behavior, managers will be most effective if they can:

- A. influence the costs and benefits of employee actions.
- B. improve employee satisfaction with the job.
- C. communicate goals and objectives effectively to their employees.
- D. fire bad employees.

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19. Assume Joseph spends his entire income on X and Y, and his indifference curves have the usual convex shape. If Joseph maximizes his utility, then:

- A. he spends his entire available income.
- B. there are other bundles that are preferred at the current price ratio.
- C. the slope of his indifference curve is greater than the slope of his budget line.
- D. the slope of his indifference curve is smaller than the slope of his budget line.

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20. Marginal costs:

- A. are the incremental costs associated with making a decision.
- B. are the expenditures already made that can't be covered.
- C. are not relevant in making a decision.
- D. are costs that are usually classified under "miscellaneous"

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21. A budget line:

- A. shows all the combinations of goods that yield the same (utility) level of satisfaction.
- B. shows all the combinations of goods that require the same total expenditure.
- C. has a slope that depends on consumer's income
- D. slopes upwards

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22. Assume the quantity of apples is measured on the horizontal axis and the quantity of oranges is measured on the vertical axis. If the budget line rotates upward, while keeping the same horizontal intercept, then:

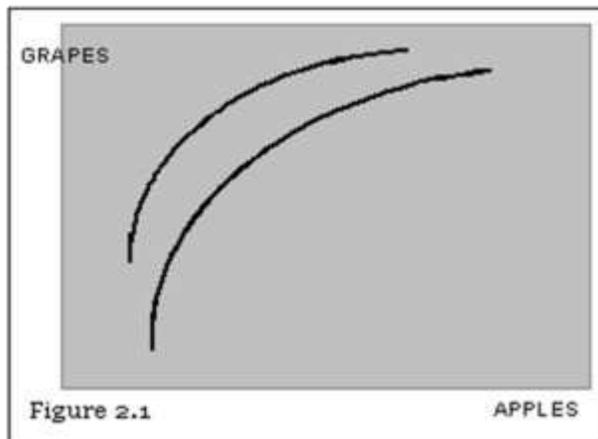
- A. the price of apples decreased.
- B. the price of oranges decreased.**
- C. the available income increased.
- D. the price of oranges increased

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23. Assume the quantity of apples is measured on the horizontal axis and the quantity of oranges is measured on the vertical axis. If Andy likes both apples and oranges, then his Marginal Rate of Substitution (i.e. the slope of an indifference curve) along the indifference curve indicates:

- A. how many oranges he is willing to give up in order to obtain one more apple.**
- B. how many additional oranges he wants in order to give up two apples.
- C. how many oranges he is willing to give up in order to get rid of one apple.
- D. how many apples he is willing to give up in order to get rid of one orange.

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24. Refer to Figure 2.1. Assume the indifference curves represent Carl's preferences for apples and grapes. What is true about Carl's preferences?

- A. He likes both.
- B. He hates both.
- C. He likes grapes, but he hates apples.
- D.** He likes apples, but he hates grapes.

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25. Assume Janet is risk-averse. Which of the following bets is she more likely to accept, depending on the degree of risk aversion?

- A. Win \$40, $\frac{1}{4}$ of the times; win \$10, $\frac{1}{2}$ of the times; and lose \$40, $\frac{1}{4}$ of the times.
- B. Win \$40, $\frac{1}{4}$ of the times; break even $\frac{1}{2}$ of the times; and lose \$40 $\frac{1}{4}$ of the times.
- C.** Win \$20, $\frac{1}{4}$ of the times; win \$10, $\frac{1}{2}$ of the times; and lose \$20, $\frac{1}{4}$ of the times.
- D. Win \$20, $\frac{1}{4}$ of the times; win \$10, $\frac{1}{4}$ of the times; and lose \$20, $\frac{1}{4}$ of the times.

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26. Assume MACROSOFT is planning to develop and sell a new word processor. It estimates that R&D expenses will amount to \$300,000 for this new software, while it will have to invest an additional \$150,000 to advertise and distribute the new product. If MACROSOFT's managers are risk-neutral, they will undertake this project if the expected revenues from the sales of the new software are:

- A. at least \$150,000.
- B. No return is necessary in the short term.
- C. at least \$300,000.
- D.** at least \$450,000.

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27. MACROSOFT decided to start developing the new word processor. After six months, the R&D phase is completed (i.e. MACROSOFT has already invested \$300,000). However, after initial negotiations with its distributors, MACROSOFT revised upward marketing and distribution expenses by \$150,000 (i.e. total marketing and distribution expenses will amount to \$300,000). If MACROSOFT's managers are risk-neutral, they should abandon the project if the expected revenues from sales of the new software are:

- A. \$599,000.
- B. \$449,000.
- C. \$299,000.**
- D. \$399,000.

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28. If Larry starts a new pizza parlor and hires a manager for \$30,000, this implies that:

- A. pizza parlor managers are inexpensive to hire.
- B. Larry must value his labor at less than \$30,000 per year.
- C. Larry must value his labor at more than \$30,000 per year.**
- D. the price of pizza would be increased if Larry worked in the parlor himself.

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29. Susan Chen is a stock analyst. She values two goods: money (income) and her integrity. Her bonus is based on the number of investments she recommends to the company. Generally speaking, the greater the level of bonus she will receive:

- A. the more she is willing to trade off her integrity.**
- B. the less she is willing to trade off her integrity.
- C. Integrity is an ethical value and is not traded with an economic good.
- D. the greater will her integrity become, since money can buy anything.

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Bloom's: Comprehension

30. The substitution effect:

- A. reduces the quantity demanded of a good when its price increases.
- B. is equal to the income effect.
- C. is always greater than the income effect.
- D. is always smaller than the income effect.

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31. The demand for normal goods obeys the law of demand because of:

- A. the substitution effect.
- B. the income effect.
- C. risk-aversion.
- D. both the substitution and income effects.

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32. The absolute value of the marginal rate of substitution measures the:

- A. slope of the budget constraint.
- B. slope of an indifference curve.
- C. relative price of two goods.
- D. optimality of consumer consumption.

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33. Marginal utility is the:

- A. total happiness obtained from a consumption bundle.
- B. additional utility obtained by lowering the price of a good.
- C. additional utility obtained by consuming one additional unit.
- D. total amount spent to purchase one additional unit.

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34. Indifference curves are downward sloping when:

- A.** both items are goods.
- B. one item is a good and the other item is a bad.
- C. we compare risk and return.
- D. both items are expensive

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35. Johnny consumes only bread and milk. When thinking of his budget constraint, assume that milk is on the horizontal axis. If the price of milk rises, his budget constraint will:

- A. shift outwards
- B. shift inwards
- C.** pivot inwards along the horizontal axis
- D. pivot inwards along the vertical axis

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36. You purchase both potatoes and gasoline regularly. Your income increases, and you purchase more gasoline. This means that:

- A. Gasoline has a negative substitution effect
- B. Potatoes are normal goods
- C. Gasoline is inferior
- D.** Gasoline is normal

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Bloom's: Comprehension

37. Suppose that canned soup is inferior. This means that when:

- A. When income rises, more soup will be bought
- B.** When income rises, less soup will be bought
- C. When income falls, less soup will be bought
- D. You will never consume canned soup because of its low quality

AASCB: Communication
Bloom's: Comprehension

38. Suppose a family's budget line is such that the horizontal axis shows the amount of food consumed, while the vertical axis has the consumption of all other goods. Suppose this family receives Food Stamps. Then this will cause the budget line to:

- A. pivot along the vertical axis
- B. pivot along the horizontal axis
- C.** shifts right by the amount of food stamps, with the y-intercept a horizontal line at the original point
- D. shift to the left

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Bloom's: Comprehension

39. O'Roberts receives a cash prize of \$3,000 and is trying to decide how much money to invest at an interest rate of 5% and how much to spend now. Consider his intertemporal budget constraint where future interest income is measured on the vertical axis. If the interest rate were 7% instead, his budget constraint would:

- A. pivot inward so that the horizontal intercept stays the same and the vertical intercept is lower
- B. pivot inward so that the horizontal intercept moves in and the vertical intercept stays the same
- C.** pivot outward so that the horizontal intercept stays the same and vertical intercept is higher
- D. pivot outward so that the horizontal intercept moves out and the vertical intercept stays the same

AASCB: Communication
Bloom's: Comprehension

40. Marginal analysis refers to:

- A. points that lie on the budget set
- B. costs that were incurred in the past and cannot be recovered, and thus should not affect current decisions
- C.** comparing the benefits and costs of choosing a little more or a little less of a good
- D. whatever must be given up to obtain something that is desired

AASCB: Communication
Bloom's: Comprehension

41. Sunk costs refer to:

- A. costs that were incurred in the past and cannot be recovered, and thus should not affect current decisions
- B. all the costs that a firm must incur in the process of production
- C. comparing the benefits and costs of choosing a little more or a little less of a good
- D. whatever must be given up to obtain something that is desired

AASCB: Communication
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42. Robinson pays \$100 for tickets to see his favorite sports team play. With 10 minutes left in the game, his team is losing heavily and has no chance of winning the game. Robinson chooses to stay until the end of game because he wants to get the full value for his admission price. As an economist, you should advise Robinson to:

- A. stay until the end of the game since his intuition is correct
- B. stay until the end of the game since he might be heckled on the way out
- C. leave the game now if his marginal benefit of leaving is greater than marginal cost, since the admission price is a sunk cost
- D. leave the game now since the line to exit the stadium is shorter now

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43. The income effect means that when the price of a good rises:

- A. the buying power of your income has been reduced
- B. consumers have an incentive to consume less of the good with a relatively higher price and more of the good with a relatively lower price
- C. your preferences also change
- D. you buy more normal goods and fewer inferior goods

AASCB: Communication
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44. Smith is given a voucher that can be spent only on textbooks. Smith has a budget constraint with textbooks on the horizontal axis and everything else on the vertical axis.

Suppose everything else is comprised only of normal goods. Then:

A. the voucher will result in Smith increasing his spending on textbooks by more than the amount of the voucher

B. Smith will most likely end up spending some more money on everything else after receiving the voucher

C. Smith will not buy any textbooks because he can use the voucher for all other goods

D. Smith will most likely end up spending less money on everything else after receiving the voucher

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