1. C Adam Smith wrote *An Inquiry into the Nature and Causes of the Wealth of Nations*. Smith claims that individuals act the way they do because it is in their self-interest. [6,1,1]
2. C Economics is the study of how individuals allocate scarce resources to satisfy their unlimited wants. Economists use simplifying assumptions to make their work easier. [6,2,2]
3. E Scarcity means that we have a limited amount of resources to satisfy our unlimited wants. Therefore, when we make choices, we face trade-offs: we must give up something to get something else. [7,1,1]
4. E Opportunity cost is defined as the value of the next best alternative. Individuals face opportunity costs due to trade-offs. [7,1,2]
5. B Room and board should not be considered a part of the cost of college because you need to eat and have someplace to live no matter what you are doing. Therefore, some type of room and board expense would be incurred regardless of whether you attend college or not. [7,1,3]
6. D Due to scarcity, individuals face trade-offs in their everyday lives. Rational actors select the action that produces the greatest benefit. [7,2,0]
7. B Due to scarcity, individuals face similar trade-offs when they decide how to satisfy unlimited wants with scarce resources. However, because some individuals can produce goods at a lower opportunity cost than others, they can specialize and create gains from trade. [7,2,0]
8. B Sophie's opportunity cost is the value of her next best alternative. In this case, she would have made $10 with either of her alternative choices, so the opportunity cost is $12. [7,1,2]
9. C There are only twenty-four hours in the day, which means humans have a limited amount of time to devote to their activities. Scarcity implies that we face trade-offs whenever we make decisions. [6,2,3]
10. A The average supermarket contains 33,000 different items. Each of those items goes through a complicated chain of activities before ultimately being placed on the shelves for consumers. [6,1,2]
11. E If two consumers voluntarily trade with each other, it must be that the benefits outweigh the costs for both people. That is, they are better off trading than remaining isolated. [7,2,2]
12. D Jasmine had to give up taking a shift in order to see a movie with her friends. This represents a trade-off that Jasmine faced. [7,1,1]
13. A Even though Benjamin didn't have to pay for the baseball ticket, the opportunity cost of attending is the time spent at the game that he could have used doing something else, such as studying for a test or earning income. [7,1,2]
14. E When individuals possess different abilities and resources, they can specialize and trade with each other to become better off. This concept is known as gains from trade. [7,2,2]
15. A Mutually beneficial trade arises from people possessing different abilities, interests, and resources, which gives rise to different opportunity costs. Gains from trade do not require that people have different wants. [7,2,2]

1. B Economic analysis relies on observation, description, and measurement of economic activity. Economic theories also play a critical role in understanding market behavior. [7,2,3]
2. D Economists build theoretical models to capture the most prescient aspects of market interactions. While these models may seem overly simplistic, they allow economists to understand what assumptions and characteristics are important. [7,2,4]
3. A Positive economics focuses on identifying cause-and-effect relationships. In that sense, the field of positive economics is free from subjective input. [8,1,1]
4. E Unlike positive economics, normative economics combines economic analysis with value judgments. That is, normative economists opine on what *should* be as opposed to what *is* the case. [8,1,2]
5. D A normative economist is concerned with evaluating the relative merits of different possible scenarios. Therefore, they would be best suited to answer a question regarding what should be the case. [8,1,1]
6. B Pareto efficiency requires that there is no way to improve at least one person's well-being without reducing another person's well-being. As a result, the only way to improve a person's welfare in a Pareto efficient situation is through the redistribution of wealth. [8,2,1]
7. A Pareto efficiency does not provide a basis for how resources should be allocated; it only requires that all resources are distributed so that no person can be benefitted without hurting someone else. Therefore, if Jose eats 2 slices, while Leticia and Maya eat 3 slices each, 1 slice of pizza goes to waste, which means the arrangement is not Pareto efficient. [8,2,2]
8. C Normative economics offers value judgments along with economic analysis. Therefore, we would use normative economics if we wanted to determine which distribution of goods is best. [8,2,3]
9. B Microeconomics focuses on individual behavior and the operation of specific markets. Meanwhile, macroeconomics focuses on the overall performance of the national economy. [9,1,1]
10. B A macroeconomist focuses on the overall performance of the national economy. Therefore, they would study changes in gross domestic product to gauge the economy's health. [9,1,1]
11. D Microeconomics and macroeconomics are most similar in their assumptions about human behavior. However, because they focus on economic activity on different scales, they focus on different aspects of human behavior. [9,1,2]
12. A Positive economists identify cause-and-effect relationships to explain how different policies could affect different groups. Therefore, in response to a minimum wage hike proposal, a positive economist might note that higher wages may cause some minimum-wage employees to lose their jobs. [8,1,3]
13. D Pareto efficiency requires that there is no way to improve at least one person's well-being without reducing another person's well-being. If one student receives $100,000, then it is impossible to benefit any of the other students with the scholarship money without hurting the student with the $100,000 scholarship. [8,2,1]
14. A Microeconomics studies individual behavior and the operation of specific markets. Because Nike and Adidas competing for customers represents one particular market, the situation would be a subject of focus for a microeconomist. [9,1,1]
15. D Vilfredo Pareto was an Italian economist who first made use of the concept of Pareto efficiency. Pareto efficiency requires that there is no way to improve at least one person's well-being without reducing another person's well-being. [8,2,1]

1. A The central topic of microeconomics is the interaction of supply and demand. Economists have identified several factors that influence the supply and demand of a particular good. [10,1,2]
2. C A market consists of all buyers and sellers of a particular good. Some markets, like the New York Stock Exchange, are highly organized, whereas other markets are more informal. [10,2,1]
3. C A good is considered perfectly competitive if there are a large number of buyers and sellers, no single buyer or seller can influence the price, the good is standardized, and buyers are well informed about the market price. Because no single seller can influence the price of a perfectly competitive good, sellers do not have market power. [11,1,1]
4. A The market for gasoline is a good proxy for a perfectly competitive market. There are a large number of sellers, and customers are always well informed about prices as they drive by local gas stations. [12,1,0]
5. C According to the law of demand, quantity demanded falls as a good's price rises. This phenomenon is a result of rational actors conducting cost-benefit analysis when deciding how to allocate their resources. [12,2,1]
6. A As the price of a good rises, the opportunity cost of consuming that good increases as well. As a result, utility-maximizing buyers will seek to reduce the quantity demanded of the good so they can afford to consume other goods. [13,1,1]
7. C The demand schedule shows the quantity demanded at each price. If we plot the points of a demand schedule on a graph, we can construct the downward-sloping demand curve. [13,1,2]
8. C We can obtain the market demand curve by adding the individual demand curves horizontally. In other words, for any given price, we add the total quantity demanded by all buyers in the market. [13,2,1]
9. A Goods for which quantity demanded falls as income rises are called inferior goods. For example, people tend to reduce their consumption of fast food as their income increases. [13,2,5]
10. B Substitute goods are goods in which the decline in the price of one good causes a decrease in the quantity demanded of another good. In contrast, complements are goods in which the decline in the price of one good causes an increase in the quantity demanded of another good. [13,2,6]
11. B Tea and coffee are an example of substitute goods. If the price of tea increases, tea drinkers will reduce their consumption of tea and switch to the lower-priced alternative, coffee. [13,2,6]
12. E Changes in future expectations can affect the quantity demanded today. If Steve expects the price of gasoline to increase next month, he will increase his demand today while it is still relatively cheap. [14,1,2]
13. D Bus rides, instant ramen, bologna, and fast food are all examples of inferior goods. As income rises, demand for these goods decreases. [13,2,5]
14. D Changes in tastes, expectations, the income of buyers, and the prices of related goods can all cause the demand curve to shift. If a good's own price changes, we see movement along the demand curve. [13,1,2]
15. B Juice and soda are substitute goods. Therefore, if the price of Coke increases, we would expect the demand curve for juice to shift to the right as the opportunity cost of drinking Coke increases. [13,2,6]

1. A According to the law of supply, quantity supplied increases as price increases. This is because the increase in price incentivizes sellers to devote more resources to supplying the good. [14,2,2]
2. E Suppliers will stop supplying a good when the opportunity cost exceeds the price. In such a scenario, the supplier would be better off pursuing its next-best alternative. [15,1,0]
3. D We can obtain the market supply curve by adding the individual supply curves horizontally. In other words, for any given price, we find the total quantity supplied. [15,1,2]
4. C Changes in input prices, technology, expectations, and the number of sellers cause the supply curve to shift. Changes in a good's own price causes movement along the supply curve. [15,1,3]
5. D Inputs are costs that suppliers must pay in order to supply their product. The price that gasoline stations charge customers represents revenue, not an input cost. [15,1,4]
6. D The x and y axes of a supply curve are quantity supplied and price, respectively. According to the law of supply, the supply curve is upward sloping. [15,1,2]
7. D When input prices increase, quantity supplied decreases. Therefore, if the price of processor chips, an input to calculators, increases, then quantity supplied of calculators decreases. [15,1,4]
8. A Improvements in technology increase quantity supplied. Therefore, the development of a new production technique for cell phones increases the quantity supplied. [15,2,1]
9. D If suppliers of gasoline expect prices to rise in the future, they are most likely to reduce quantity supplied today and store current inventory in anticipation of higher future prices. [15,2,2]
10. B If Apple, a major cell phone supplier, decides to close a production facility, that would cause the quantity supplied of cell phones to decrease, not increase. [15,2,3]
11. A If the price of grapes, an input to wine, increases, the supply curve for wine will shift to the left. This is due to the negative relationship between input prices and quantity supplied. [15,1,3]
12. A Input prices and quantity supplied have a negative relationship. If input prices rise, quantity supplied decreases. [15,1,4]
13. B Quantity supplied refers to the amount produced by sellers. This does not necessarily correspond to the profit-maximizing quantity. [14,2,2]
14. A Changes in expectations affect both quantity demanded and quantity supplied. Tastes and prices of related goods only affect quantity demanded, whereas technology and input prices only affect quantity supplied. [14,1,2; 15,2,2]
15. C If the price of football tickets increases, we would expect the quantity supplied to increase due to the law of supply. We could also expect quantity demanded to decrease due to the law of demand. [15,1,2]

1. D The market equilibrium occurs where the supply and demand curves intersect. Because demand is downward-sloping and supply is upward-sloping, there is a unique intersection point. [15,2,6]
2. D When the current market price exceeds the equilibrium price, quantity supplied exceeds quantity demanded. The difference is referred to as excess supply. [18,1,1]
3. A When the current market price is above the equilibrium price, quantity supplied exceeds quantity demanded. As a result, sellers have an incentive to lower their prices to increase demand. [18,2,1]
4. A Shortages occur when quantity demanded exceeds quantity supplied. Excess demand occurs at prices below the equilibrium price. [18,2,1]
5. B Excess demand occurs when the market price is below the equilibrium price. If the equilibrium price of Oreos is $2.50, then quantity demanded would exceed quantity supplied at $2. [18,1,1]
6. D In market equilibrium, participants have no incentive to alter their behavior. One distinct feature of market equilibrium is that the market naturally gravitates toward this unique combination of price and quantity. [15,2,5]
7. E Sellers have an incentive to lower prices when quantity supplied exceeds quantity demanded. If the current quantity supplied of grapes is 500, excess supply would be positive when quantity demanded is only 450. [18,2,1]
8. C In market equilibrium, suppliers can sell as much of the good as they would like, and buyers can buy as much of the good as they would like. However, buyers would obviously prefer the price to be lower, whereas suppliers would want the price to be higher. [18,1,0]
9. A If the quantity supplied of avocados is 9,000 and the quantity demanded is 8,500 at the current market price of $2, then there is a slight excess supply. Therefore, we can conclude that the equilibrium price exists slightly below the current market price, such as $1.50. [16,1,1]
10. D To find market equilibrium, we find the intersection of supply and demand by setting the two equations equal to each other. Once we find the equilibrium quantity, we can plug that number into either of the two equations to solve for equilibrium price. [15,2,6]
11. A To find market equilibrium, we find the intersection of supply and demand by setting the two equations equal to each other. In this case, $Q = 6$ clears the market because quantity supplied equals quantity demanded. [15,2,6]
12. E Given the functions, at a market price of $6, quantity demanded equals 4 and quantity supplied equals 1. This results in excess demand of 3. [18,2,2]
13. E The market equilibrium occurs where the supply and demand curves intersect. Because demand is downward-sloping and supply is upward-sloping, there is a unique intersection point. [15,2,6]
14. D If we plug the current market price into the two equations, we find that quantity demanded equals 9 and quantity supplied equals 3. Therefore, excess demand is 6. [18,2,2]
15. C When the market price is below the equilibrium price, quantity demanded exceeds quantity supplied. Due to high demand, sellers can increase the price without sacrificing sales. [18,2,2]

1. B Competitive markets are attractive for several reasons. One particular desirable feature is that they create two-way communication flows between buyers and sellers. [20,1,2]
2. C In competitive markets, the price reveals to consumers the opportunity cost of supplying that good. On the other side, the price reveals to suppliers the value consumers place on the good. [20,1,1]
3. D The competitive market equilibrium maximizes total surplus. As a result, the outcome is Pareto efficient, and one group cannot increase its surplus without taking away surplus from the other group. [20,1,2]
4. E Consumer surplus equals willingness to pay minus the market price. In other words, when you value a good more highly than its current price, that results in positive consumer surplus to you. [20,2,0]
5. C Consumer surplus equals willingness to pay minus the market price. Therefore, Jake's consumer surplus is $100, Yolanda's is $150, and Emily will not buy a ticket because her willingness to pay is less than the market price. Accordingly, total consumer surplus equals $100 + $150 = $250. [20,2,0]
6. B At any point along a demand curve, the height measures buyers' willingness to pay. Therefore, the difference between the height of the demand curve and the market price represents a buyer's surplus. [20,2,1]
7. E Consumer surplus results when buyers' willingness to pay exceeds the market price. On a graph, consumer surplus is the area above the market price and below the demand curve. [20,2,1]
8. D Producer surplus results when the market price exceeds the opportunity cost of supplying the good. We can measure producer surplus on a graph by looking at the area below the market price and above the supply curve. [20,2,2]
9. B Producer surplus results when the market price exceeds the opportunity cost of supplying the good. We can measure producer surplus on a graph by looking at the area below the market price and above the supply curve. [20,2,2]
10. C Competitive markets are efficient in that the market price signals the value each consumer places on the good and the cost of producing each unit of the good. [22,2,0]
11. A Total surplus equals consumer surplus plus producer surplus. Competitive markets maximize total surplus. [20,2,3]
12. B Producer surplus results when the market price exceeds the price at which suppliers are willing to sell. Therefore, Miguel's surplus is $200, Angel's surplus is $500, John's surplus is $100, and Jenna will not sell because the market price is below her willingness to sell. Accordingly, total producer surplus is $200 + $500 + $100 = $800. [20,2,2]
13. D Consumer surplus equals willingness to pay minus market price. Therefore, if Bob's surplus is $100 and the market price is $400, it must be the case that his willingness to pay is $500. [20,2,0]
14. B Producer surplus equals market price minus the price at which suppliers are willing to sell. Therefore, if Jenna's surplus is $200 and the market price is $1,200, it must be the case that she is willing to sell at a price of $1,000. [20,2,2]
15. A At a quantity less than the equilibrium quantity, value to consumers exceeds producers' costs. As a result, both parties would benefit from an increase in quantity. [22,1,0]

1. D An increase in the supply of football tickets causes the equilibrium price to decrease and equilibrium quantity to increase. Consumer surplus increases, while the effect on producer surplus is ambiguous. [23,2,0]
2. C Public education campaigns about tobacco change consumers' attitude toward cigarettes. Therefore, these campaigns result in lower demand for cigarettes. [25,1,1]
3. B If input prices to gasoline rise, then the supply curve shifts to the left. This causes the equilibrium price to increase and the equilibrium quantity to decrease. [23,2,0]
4. A If suppliers expect the price of ice cream to decrease in the future, they will increase their supply today. Changes in the price of milk, the price of cookies, and the number of buyers affect the demand curve. [22,1,1]
5. A If coffee suppliers develop a new technology, this will cause the supply curve to shift to the right. As a result, equilibrium price will decrease, not increase. [22,1,1]
6. B Shifts in the demand curve lead to an unambiguous change in producer surplus. If input prices decrease, the effect on producer surplus is ambiguous because the higher price conflicts with the lower quantity supplied. [23,2,1]
7. D An increase in the price of laptops, a substitute for tablets, increases the demand for tablets. Therefore, the market equilibrium for tablets shifts up and to the right. [23,2,0]
8. D Dairy represents an input to coffee. Therefore, if dairy prices increase, the supply curve of coffee will shift to the left, which causes the equilibrium price to increase. [23,2,0]
9. B If consumers and producers both expect the price of gasoline to rise in the future, demand will increase, and supply will decrease. While this results in ambiguous effects on equilibrium quantity, equilibrium price definitely increases. [23,2,0]
10. A If game developer wages, an input to video games, increase, the supply curve will shift to the left. While this increases the price at which suppliers can sell, the quantity supplied decreases, which is why the effect on producer surplus is indeterminate. [23,2,1]
11. B An advertising campaign that illustrates the negative health effects of fast food is most likely to reduce demand for fast food. This will decrease the equilibrium price and quantity of fast food. [25,1,1]
12. D Consumer surplus increases when supply increases. This is because consumers pay a lower price, and they can buy more quantities of that good at a lower price. [23,2,1]
13. E Increased demand causes equilibrium quantity to increase, while decreased supply causes equilibrium quantity to decrease. Therefore, the combined effect results in an ambiguous change in equilibrium quantity. [23,2,0]
14. D An increase in supply causes equilibrium quantity to increase and equilibrium price to decrease. [23,2,0]
15. C If the price of milk, a complement to Oreos, increases, the demand for Oreos will decrease. This causes the equilibrium price of Oreos to decrease. [23,2,0]

1. E Price elasticity of demand is calculated as percentage change in quantity demanded by percentage change in price. As you move down the demand curve, elasticity decreases. [25,1,4]
2. C For a downward-sloping demand curve, price elasticity of demand is always negative due to the inverse relationship between demand and price. As you move down the demand curve, elasticity decreases in absolute terms. [25,1,5]
3. C Price elasticity of demand measures consumers' responsiveness to changes in price. Elastic demand means that consumers are very responsive to price fluctuations. [25,1,5]
4. E Demand is inelastic when a 1% change in price results in a less than 1% change in demand. Therefore, if demand only decreases 0.5% given a 1% change in prices, demand is inelastic. [25,2,0]
5. A The higher the elasticity of demand, the flatter the demand curve. Intuitively, a flat curve means that a small change in the y variable (price) results in a big change in the x variable (quantity demanded). [25,1,6]
6. E Luxury goods tend to have higher price elasticities of demand because consumers don't need to buy them. If a good has no close substitutes, demand would be relatively inelastic. [25,2,4]
7. E Coke has a high price elasticity of demand because Pepsi produces a very similar product. Therefore, if the price of Coke increases, consumers can switch their consumption to Pepsi. [25,2,3]
8. D Price elasticity of demand is calculated as percentage change in quantity demanded divided by percentage change in price. In this example, we would find elasticity of demand by taking 20%/10% = 2. [25,1,4]
9. D If quantity demanded does not depend on price at all, we say that the good is perfectly inelastic. A perfectly inelastic demand curve is represented as a vertical line. [26,1,2]
10. C The supply of airline flights is relatively elastic because airlines can easily shift planes from one route to another. [26,1,5]
11. A Perfectly inelastic supply means that quantity supplied will not change at all as the price changes. Monet paintings have perfectly inelastic supply because there is a finite supply of them, and there is no (legal) way to produce more of them. [26,2,2]
12. E Total revenue equals price times quantity. We can use elasticity to determine how revenue will change given a change in prices. [26,2,4]
13. C If demand is elastic, then total revenue will increase as price decreases. This is because the percentage increase in quantity demanded outweighs the drop in price. [26,2,5]
14. E Although the adoption of BGH led to lower farm income, dairy farmers had no other choice because milk is a highly competitive market. [29,1,2]
15. E Price elasticity of supply is calculated as the percentage change in quantity supplied divided by the percentage change in price. A change in supply from 200 to 250 is a 25% increase, and a change in price from \$2 to \$3 is a 50% increase. Therefore, elasticity of supply equals 25%/50% = 1/2. [26,1,3]

1. E The federal government and most states have enacted a minimum wage. A minimum wage acts as a price floor. [29,2,1]
2. E A binding price ceiling is set below the equilibrium price. If the price ceiling is set above the equilibrium price, then buyers and suppliers will continue to transact at the market equilibrium. [29,2,2]
3. E Rent controls are a form of price ceiling. Price ceilings reduce producer surplus because quantity supplied and price fall. [29,2,3]
4. E Price controls always result in some form of deadweight loss. The exact mechanics of how this deadweight loss occurs depends on which type of price control is enacted. [33,1,1]
5. E In the long-run, supply and demand of apartments become more elastic. If rent controls are in place, new residents will be attracted to the city's low prices, while landlords will cut back on maintenance costs. [32,2,0]
6. C An effective price floor must be set above the existing equilibrium price. Therefore, if the current price of wheat is $5, an effective price floor would set the price of wheat at $6. [32,2,1]
7. A Price floors set a minimum price above the existing equilibrium. When market price exceeds equilibrium price, quantity supplied exceeds quantity demanded. [33,1,0]
8. A If the government imposes a $0.10 tax per avocado on consumers, then the demand curve shifts down by $0.10. The government will collect tax revenue equal to $0.10 times the new equilibrium quantity. [33,1,4]
9. D Graphically, we can find the new equilibrium quantity after the government imposes a tax by finding where the vertical distance between demand and supply equals the tax. The value on the x axis that corresponds to this point represents the new equilibrium quantity. [33,2,3]
10. D When the government imposes a tax, the deadweight loss is represented by the triangle to the right of the new equilibrium quantity and between the supply and demand curves. [33,2,4]
11. D Regardless of who pays the tax, consumers and producers share the burden. The more inelastic demand is, the greater the share of the tax paid by the buyers. [34,1,2]
12. C The deadweight loss is minimized when both demand and supply are inelastic. In such a case, the new equilibrium quantity will be very close to the original equilibrium. [34,2,0]
13. E A tax creates a price wedge between what consumers pay and what suppliers receive. Graphically, we can find the new equilibrium quantity after the government imposes a tax by finding where the vertical distance between demand and supply equals the tax. [33,2,3]
14. B Tax revenue always equals the new equilibrium quantity times the tax. It will not necessarily be equal to the loss in total surplus due to the deadweight loss. [34,1,1]
15. A During the 1979 oil crisis, the federal government imposed a price ceiling to protect low-income consumers. Price ceilings establish a maximum price below the existing equilibrium price. [29,1,1]

1. B A production possibility frontier expresses the trade-offs a producer faces when allocating production between two different goods. The slope of the PPF represents the opportunity cost of producing one good in terms of the other good. [35,2,1]
2. C The point where the production possibility frontier intersects the x-axis represents the amount of the x-axis good an individual can make if they devote their entire time to producing that good. [36,1,0]
3. A All points along the production possibility frontier are efficient. Where a producer decides to produce along the PPF depends on their preferences. [36,1,1]
4. E The slope of a production possibility frontier expresses the opportunity cost of producing one good in terms of another. A steeper slope means that the producer is relatively more efficient in producing the y-axis good. [36,1,1]
5. E If Sophie has an absolute advantage compared to Lily, then her production possibility frontier will be above and to the right of Lily's. The relative slopes of the two PPFs will depend on their opportunity costs. [36,1,3]
6. D All points along a production possibility frontier are efficient. A producer's preferences will dictate which point they select on the production possibility frontier. [36,1,2]
7. D If two production possibility frontiers have the same, then it must be the case that they face the same opportunity cost. However, having the same slope reveals nothing about absolute advantage or preferences. [36,1,1]
8. B When two trading partners have different opportunity costs, they can specialize in the good in which they have a comparative advantage and trade with each other. So long as the partners have different comparative advantages, gains from trade exist. [36,2,2]
9. A Total surplus always increases in the presence of free trade. However, that does not guarantee that everyone is made better off; in fact, specialization inevitably benefits some domestic industries at the expense of others. [40,1,1]
10. B When a country's domestic equilibrium price is less than the world price, opening to trade will result in increased domestic production and decreased domestic consumption. The country will export the difference between domestic consumption and production. [40,1,3]
11. B When a country becomes an exporter, domestic production increases, producer surplus increases, consumer surplus decreases, and social welfare increases. Free trade does not lead to deadweight loss. [40,1,4]
12. C If a country becomes an importer, domestic consumption increases to where the demand curve intersects the world price. The country imports the difference between domestic consumption and production. [40,2,1]
13. B If Marco can produce 8 loaves of bread or 24 bottles of wine in one day, his opportunity cost of producing 1 loaf of bread is 3 bottles of wine. Marco is relatively more efficient in producing wine. [36,1,1]
14. D If a production possibility frontier intersects the x-axis at 10 units and intersects the y-axis at 5 units, then the producer is more efficient at producing the x-axis good. The slope of the production possibility frontier is -1/2. [36,1,2]
15. D If the United States' grain prices are higher than world prices when it is isolated, then opening to trade would cause the country to become an importer. As a result, producer surplus decreases, social welfare increases, domestic consumption increases, and domestic production decreases. [40,1,4]

1. D Firms supply goods and services in an economy through the combination of labor, capital, and raw materials. Their goal is to maximize profits. [40,2,2]
2. C A firm's goal is to maximize profits. Importantly, the profit-maximizing quantity does not always maximize revenue or minimize costs. [40,2,3]
3. B Accounting costs only account for explicit costs incurred in the production process. Economic cost also includes opportunity cost. [40,2,4]
4. E Economic profit is calculated as accounting profit less opportunity cost. Therefore, given economic profit of $100 and $100 in opportunity costs, accounting profit must equal $200. [42,1,2]
5. E Fixed costs do not vary with the level of production. Fixed costs include rent, equipment costs, insurance premiums, and the opportunity cost of time. [42,1,3]
6. C Marginal cost is calculated as the change in total costs divided by the change in quantity produced. Marginal costs are usually increasing due to diminishing returns to scale. [42,1,5]
7. A In the short run, some factors of production are fixed, which hinders the marginal productivity of extra workers. For this reason, marginal costs are increasing. [42,2,2]
8. A In a perfectly competitive market, an individual supplier can supply as much output as they want at the equilibrium price. In other words, the supplier faces a horizontal, or perfectly elastic, demand curve. [42,2,4]
9. E When marginal revenue exceeds marginal cost, the firm should increase production. The profit-maximizing quantity for firms is where marginal revenue equals marginal cost. [42,2,5]
10. D A producer's supply curve is upward sloping to reflect increasing marginal costs. Marginal costs are increasing when diminishing returns to scale applies. [42,2,6]
11. B The profit-maximizing quantity for firms is where marginal revenue equals marginal cost. In perfectly competitive markets, firms earn positive accounting profit but zero economic profit. [42,2,5]
12. C Employing more workers at a potato chip factory increases the total amount of wages paid to employees. Hiring additional labor does not automatically translate to diminishing returns to scale. [42,1,3]
13. A If accounting profit is negative, total cost must exceed total revenue. In a perfectly competitive market, firms will exit if they are earning negative accounting profit. [42,1,1]
14. D In a perfectly competitive market, an individual firm faces a horizontal demand curve. Therefore, marginal revenue is constant as output increases. [42,2,4]
15. B Marginal cost is calculated as the change in total costs divided by the change in quantity produced. Therefore, if total costs increase by $150 when output increases by 25 units, the marginal cost is $6. [42,1,5]

FOCUSED QUIZ 12

IMPERFECT COMPETITION: MONOPOLY – WELFARE CONSEQUENCES OF MONOPOLY, PP. 43-45

1. A Unlike firms in perfectly competitive markets, firms in imperfectly competitive markets face a downward-sloping demand curve. Nevertheless, the objective to maximize profits is the same. [43,2,1]
2. D Firms that possess market power have the ability to choose prices. However, this also means that there is a trade-off between price and quantity demanded. [43,2,2]
3. D Monopolies arise due to barriers to entry. Three key sources of barriers to entry include ownership of a key resource, government-created monopolies, and natural monopolies. [43,2,3]
4. B At one point, 80% of the world's diamonds came from DeBeers-owned mines. DeBeers established a monopoly through ownership of a key resource, diamond mines. [43,2,4]
5. B Copyright law protects the original work of authors. Copyrights are an example of a government-created monopoly. [44,1,0]
6. B Patents granted to new inventions expire after twenty years. Patents are an example of a government-created monopoly. [43,2,5]
7. A Natural monopolies are created when large fixed costs enable a single firm to serve the market more efficiently than two or more firms. The railroad industry is an example of a market that is prone to natural monopoly. [44,1,1]
8. B Natural monopolies are created when large fixed costs enable a single firm to serve the market more efficiently than two or more firms. In natural monopolies, average costs decrease as output increases. [44,1,1]
9. C Monopolies maximize profit when they produce where marginal revenue equals marginal cost. However, they charge a price that exceeds marginal cost. [45,1,2]
10. B Monopolies maximize profit when they produce where marginal revenue equals marginal cost. However, the price they charge is determined by the demand curve, which sits above the marginal revenue curve. [45,1,3]
11. A Compared to perfect competition, monopolies supply a lower quantity at a higher price. As a result, there is a reduction in social welfare. [45,1,4]
12. B Because monopolies have market power, their marginal revenue decreases as output increases. Some, but not all, monopolies are regulated by the government. [45,1,1]
13. A In a monopoly, price must decrease if supply increases, because the firm faces a downward-sloping demand curve. [43,2,1]
14. B At \$16, demand equals 300, which gives revenue of \$4,800. When price decreases to \$15, demand must be 500, given revenue of \$7,500. Therefore, marginal revenue is calculated as \$2,700/200 = \$13.50. [45,1,1]
15. B Cable television is an example of a natural monopoly. It is more cost-effective for a single firm to supply the market than two or more firms. [44,1,1]

1. B One way governments deal with monopolies is through regulation. In 1984, U.S. antitrust regulators broke up AT&T. [45,2,1]
2. D Anti-trust regulators disapproved of Microsoft's bundling of its Internet browser with the Windows operating system, as they viewed it as an anti-competitive practice. [45,2,1]
3. D Even though monopolies are allowed to exist, they are frequently closely regulated. Public oversight agencies approving utility rates is a form of regulation. [45,2,2]
4. B Public ownership is one way that governments deal with monopolies. For example, municipal government typically operate local water, sewer, and sanitation services. [45,2,2]
5. C In perfect price discrimination, a monopolist can charge each consumer its maximum willingness to pay. As a result, the marginal revenue curve overlaps market demand. [45,2,3]
6. C Financial aid for university tuition is an example of price discrimination. Consumers can be grouped into different categories and charged different prices. [47,1,2]
7. E While price discrimination allows the monopolist to capture a larger fraction of the benefits produced by each transaction, it moves the market closer to the socially efficient quantity. As a result, deadweight loss decreases. [47,1,3; 47,2,0]
8. D Breakfast cereal, aircraft, cigarettes, and washing machines are all goods produced in highly concentrated industries. When a few suppliers dominate an industry, the market is called an oligopoly. [47,2,1]
9. C Oligopolies are harder to analyze than monopolies because firms must also consider the choices of other suppliers. However, we can conclude that they do decrease social welfare to some extent. [47,2,2]
10. D An agreement where suppliers cooperate and behave like a monopolist is called a cartel. The Organization of Petroleum Exporting Countries (OPEC) is an example of a cartel. [48,1,1]
11. B Monopolistic competition is the most common form of imperfect competition. In this market structure, firms produce similar but differentiated products. [48,1,4]
12. E Monopolistic competition describes markets where firms produce similar but differentiated products. Each firm faces a downward-sloping demand curve due to differences between the products. [48,1,4]
13. C Unlike a firm in perfect competition, a firm in monopolistic competition charges a price above marginal revenue. This is because the latter firm faces a downward-sloping demand curve. [48,2,1]
14. D Because price exceeds marginal cost, monopolistic competition leads to some social inefficiency. On the positive side, consumers receive a range of options. [48,2,4]
15. C The restaurant industry is a prime example of monopolistic competition. There are a variety of businesses that offer similar but different products. [48,1,4]

1. D Entrepreneurs earn economic profits by creating barriers to entry and establishing temporary monopolies. Entrepreneurs create new products and services, develop new methods of production, and establish new markets. [49,1,2]
2. C Entrepreneurs create new products and services, develop new methods of production, and establish new markets. They also help break down existing market imperfections as entrepreneurs work to invent around existing barriers to entry to extract economic profits. [49,1,3]
3. A Joseph Schumpeter coined the term "creative destruction" to describe how entrepreneurs continue to develop new and improved products. [49,2,0]
4. E Joseph Schumpeter coined the term "creative destruction" to describe how entrepreneurs continue to develop new and improved products. The existence of economic profits is the driving force behind creative destruction. [49,2,0]
5. E Entrepreneurs create new products or services to establish temporary monopolies and earn positive economic profits. The development of new soda flavors is not an example of an entrepreneur breaking down barriers to entry to form a temporary monopoly. [49,1,4]
6. D Positive externalities are an example of a market failure. In a positive externality, the actions of one person benefit someone else, but neither party pays nor is paid for these effects. [49,2,4]
7. A In a positive externality, the actions of one person benefit someone else, but neither party pays nor is paid for these effects. Apple farmers benefit from the actions of nearby beekeepers, but the value of the apple crop does not enter into the beekeeper's cost-benefit analysis. [50,1,2]
8. D If two companies produce goods that are complements, it is most likely that they impose externalities on each other. For example, increased demand for Blu-ray discs increases the demand for Blu-ray players, which is an example of a positive externality. [50,1,3]
9. B The firm's marginal cost plus the cost of treating the pollution it produces is called the true social cost of production. The true social cost of production can be thought of as an upward shift in the supply curve. [50,2,2]
10. E The true social cost of production can be thought of as an upward shift in the supply curve. Therefore, the true social cost of production intersects the demand curve at a higher price and lower quantity. [50,2,2]
11. B The demand curve only reflects the value that consumers place on the good in question. However, since each unit of a good that produces a positive externality increases the value of another good, the true social value of the activity is shifted up by the increase. [50,2,4]
12. B The Coase Theorem states that the private market can resolve inefficiencies caused by externalities. However, it requires clearly defined property rights. [51,2,1]
13. A Even though the pollution from an oil refinery can cause significant damage to nearby communities, it is unlikely that the parties can arrive at a negotiated solution because the costs to negotiation are too high. This is partly because although the total effects are large, they are distributed among a large population, which results in little individual incentive to negotiate. [52,2,3]
14. A It is most effective to use taxes to remedy the effects of externalities when the value of the externality is measurable. Otherwise, quotas that limit the activity are another option. [53,1,1]
15. E The United States Environmental Protection Agency auctions off the rights to emit sulfur dioxide. This ensures that the permits go to those who value them most highly. [53,1,2]

1. D When groups make decisions collectively, they can internalize externalities. As a result, total welfare will be higher than if individuals made decisions independently. [55,1,1]
2. C The existence of private property seems most natural to those who grew up in a market economy. It may be surprising to discover that private property is a social innovation. [53,1,3]
3. C The tragedy of the commons occurs when people own a resource jointly and no one accounts for the effects of its overuse. Therefore, the tragedy of the commons is a phenomenon that explains negative externalities. [55,1,2]
4. D If a particular good is a rival good, then one person's consumption reduces the amount available for others. For example, your consumption of a slice of pizza reduces the amount of pizza available for everyone else. [56,1,2]
5. A A good's excludability is determined by the ability to control who consumes the good. Goods for which non-paying customers can still enjoy the benefits are non-excludable. [56,1,3]
6. E A professional sports venue can easily exclude a patron from entering the stadium without a ticket. Therefore, a professional sports game would be an example of an excludable good. [56,1,3]
7. B Rival goods are finite in nature, which is why one person's consumption reduces the amount available for others. If the same good can be used simultaneously, then it is likely non-rival. [56,1,2]
8. A Private goods are characterized by a high degree of rivalry and high degree of excludability. Pizza, gasoline, polo shirts, and haircuts all meet that definition, whereas satellite radio is non-rival. [56,1,4]
9. E Common resources are characterized by a high degree of rivalry and low degree of excludability. Common resources have a high risk of being overutilized. [56,1,5]
10. E Common resources suffer most from the tragedy of the commons. The good is finite in nature, and it is difficult to limit access. [56,2,0]
11. D Collective goods are prone to natural monopolies because the marginal cost of production is close to zero. [56,2,1]
12. E Collective goods are prone to natural monopolies because the marginal cost of production is close to zero. Monopolies have an incentive to supply too little quantity and charge too high of a price. [56,2,3]
13. E Collective goods are characterized by a low degree of rivalry and high degree of excludability. Customers must pay for a Netflix subscription, but multiple Netflix customers can stream at the same time. [56,1,2]
14. B The easiest way to solve the tragedy of the commons is to establish property rights or internalize the externality. When that is not feasible, the government can step in. [56,1,1]
15. C A music subscription service can require customers to pay to use its product, which makes it excludable. However, several customers can use the good at the same time, so it is also non-rival. [56,2,2]

1. E Institutions structure human interaction through formal and informal rules. Marriage is an example of an institution. [57,2,1]
2. E Like institutions, organizations structure human interaction. However, they do so through formal rules and structures. [57,2,1]
3. D Institutions require voluntary cooperation from individuals. Self-interested individuals will only participate if the benefit exceeds the cost. [57,2,2]
4. E Institutions require voluntary cooperation from individuals. Self-interested individuals will only participate if the benefit exceeds the cost. [57,2,2]
5. B The government possesses the distinct ability to tax its citizens. The degree to which the government can exercise absolute power over taxation depends on population mobility. [57,2,3]
6. C The court system ensures that contracts are enforced. Without courts, individuals would be more reluctant to enter written agreements. [58,1,2]
7. A Pork barrel politics is the tendency of legislators to introduce projects that disproportionately benefit their communities. They gain support for their projects by promising to support their colleagues' pet projects in return. [58,1,3]
8. C In the restaurant example, Brian orders the cheesy bread because the costs are spread out over a larger amount of people. This logic explains pork barrel politics, or the tendency of legislators to introduce projects that disproportionately benefit their communities. [58,2,1]
9. D Like institutions, organizations structure human interaction. However, they do so through formal rules and structures. [57,2,1]
10. D Logrolling is the practice of supporting a colleague’s pet project so that they will support your project in return. [58,2,3]
11. B U.S. price supports for sugar exemplify rent-seeking behavior. The price supports direct economic benefits to domestic sugar producers rather than consumers. [58,2,4]
12. D Although U.S. price supports for sugar have resulted in domestic sugar prices that are twice as high as the rest of the world, most voters are unaware of the policy because the costs are spread across the entire population. [59,1,0]
13. C Unlike institutions, governments have the ability to compel action due to their legal monopoly on the legitimate use of force. [58,1,1]
14. C Price supports and import controls help the U.S. sugar industry charge prices that are as twice as high as the rest of the world. [58,2,4]
15. B Compared to the rest of the world, U.S. sugar prices are twice as high due to price supports. [58,2,4]

1. C Macroeconomics addresses two major issues. The first is factors that affect long-run economic growth, and the second is how short-run fluctuations in economic activity affects unemployment and aggregate price levels. [61,1,3]
2. A Since 1900, United States real gross domestic product has increased by a factor of forty. Meanwhile, the population has only quadrupled. [61,2,4]
3. E United States real gross domestic product notably declined during the Great Depression (1929-1933). However, it increased at an above-average rate during World War II. [61,2,4]
4. E The Latin term "per capita" translates to "per head." Economists frequently use the term to refer to averages calculated for an entire population. [62,1,1]
5. C Average labor productivity is calculated as total output in an economy divided by total number of workers employed. Average labor productivity has steadily increased in the United States since 1900. [62,2,1]
6. C Countries in South Asia and Africa have some of the lowest levels of production per person. For example, India's output per worker is only 3% of that of the United States. [63,1,1]
7. E The business cycle refers to the fluctuation between troughs and peaks in economic activity. Expansions describe periods between a trough and a peak, whereas recessions are periods between a peak and a trough. [64,2,1]
8. E Recessions are commonly associated with declining employment opportunities and slower wage growth. [64,2,1]
9. A Normally, the level of inflation in an economy is positive. Between 1929 and 1933, United States aggregate prices fell as the Great Depression took hold. [65,2,0]
10. C The labor force is comprised of the employed and the unemployed. This includes all people who are either working or actively seeking a job. [64,2,2]
11. B A country is running a trade surplus if exports exceed imports. When imports exceed imports, we say that the country is running a trade deficit. [66,1,2]
12. A In 2019, the average output per person in the United States economy was around $65,000. [62,2,2]
13. D The unemployment rate is calculated as the percentage of the labor force that would like to work but cannot find a job. Therefore, the unemployment rate is calculated as the number of workers unemployed divided by the labor force. [64,2,2]
14. B During World War I (1914-1917), inflation peaked at 20%. More recently, inflation in the United States has been around 2%. [68, Figure 36]
15. A Historically, the United States ran a trade surplus. However, since the 1970s, the United States has imported more than it has exported. [69, Figure 37]

1. E Aggregation refers to the process of combining many different things into a single economic variable. Macroeconomists frequently use aggregation to measure total output in an economy. [66,2,1]
2. B Gross domestic product is defined as the market value of all final goods and services produced within a country during a specified period. [67,2,0]
3. A Intermediate goods are goods that are used up in the process of producing a final good. To avoid double counting, intermediate goods are excluded from GDP. [68,2,0]
4. A The $100,000 worth of steel represents an intermediate good to the car manufacturer. Therefore, the value of the final good is $500,000, which includes the $100,000 worth of steel. [69,1,0]
5. E Sometimes, goods can be final goods or intermediate goods. In this case, Brenda's contribution to GDP equals the value of the milk sold ($250) plus the value of the ice cream sold ($400), which is $650. [69,2,0]
6. A Gross domestic product includes all final goods and services produced within a country during a specified period. [70,1,2]
7. B The issue of measuring national output has been around for several centuries. In the mid-1600s, Sir William Petty attempted to measure national output to assess the Irish's ability to pay taxes to the British government. [70,1,3]
8. B The Great Depression sparked interest in measuring national output to determine an appropriate response to the economic downturn. In 1932, the U.S. Department of Commerce commissioned Simon Kuznets to develop a system to measure national output. [70,1,4]
9. E Typically, economists include all national defense expenditures in GDP. However, some could argue that national defense should be considered an intermediate good. [70,2,2]
10. B As more women have entered the paid labor force in recent decades, the amount of commercially provided childcare and housecleaning has increased. However, the increase in total production from this trend could be overstated, as some of this increase represents a shift from non-market to market activity. [70,2,3]
11. A Spending by firms on final goods and services is counted towards GDP as investment. Household purchases of new homes also comprises this category. [71,1,2]
12. E Consumer durables include long-lived consumer goods, such as cars and furniture. New homes are included as residential fixed investment. [71,1,1]
13. D Transfer payments are not included in government purchases of goods and services. Therefore, Social Security payments are left out of GDP. [71,2,1]
14. B Economists use real GDP to isolate the effects of changes in production. To calculate real GDP, economists multiply current production by prices from a base year. [72,1,5]
15. E To calculate real GDP, economists multiply current production by prices from a base year. In this example, real GDP would be calculated as (30 shirts * $10) + (15 jeans * $25) = $675. [72,2,0]

1. A The United States Bureau of Labor Statistics calculates the Consumer Price Index every month. The prices used to calculate the CPI come from physical store visits and website checks. [72,2,2]
2. C The Bureau of Labor Statistics periodically surveys households about their expenditures to determine the market basket for the Consumer Price Index. Different bundles are constructed for different income levels and geographic regions. [72,2,2]
3. C The United States Bureau of Labor Statistics calculates the Consumer Price Index every month. The CPI is calculated as 100 * current cost of the bundle / cost of the bundle in base year. [72,2,2]
4. D The United States Bureau of Labor Statistics calculates the Consumer Price Index every month. The CPI is calculated as 100 * current cost of the bundle / cost of the bundle in base year. [73,1,1]
5. E The substitution effect describes how households shift consumption away from expensive goods and services toward less expensive ones. Because the CPI uses a fixed basket, it overstates the effect of rising prices because it fails to recognize consumers' decision to substitute to less expensive goods. [73,2,2]
6. B In 1996, the Boskin Commission found that the CPI overstated the rate of price inflation by 1.3% per year. Three key sources of upward bias in the CPI include substitution bias, unmeasured quality change, and the introduction of new goods and services. [74,1,3]
7. D The GDP deflator is calculated as 100 * nominal GDP / real GDP. Like CPI, the GDP deflator measures changes in the cost of living. [74,2,1]
8. D Whereas the CPI uses a fixed market basket to weight goods, the GDP deflator adjusts to changing consumption patterns over time. As a result, it is not prone to substitution bias. [74,2,4]
9. D To be classified as employed, a person must have worked for pay either full- or part-time during the previous or is on vacation or sick leave from a regular job. Therefore, an unpaid intern would not be considered employed. [75,1,1]
10. B The labor force participation rate is calculated as the ratio of the labor force to the working-age population. Historically, the United States labor force participation rate has been around 60%. [75,2,1]
11. C New workers entering the labor force would be counted as frictional unemployment. This category of unemployment occurs due to the normal matching process between employees and employers. [76,1,2]
12. D Structural unemployment arises due to the mismatch between job openings and job seekers. This could be due to geographical differences or differences in required skill. [76,2,1]
13. D To be considered unemployed, a person without a job must have looked for one within the past four weeks. [75,1,2]
14. D As of July 2020, teenagers had the highest unemployment rate, which was 19.3%. The unemployment rate also varies by race, ethnicity, and gender. [76, Figure 41]
15. D To be counted as part of the labor force, a person must be at least sixteen years of age and be either employed or unemployed. Therefore, a 15-year-old employee would not be counted under this definition. [75,1,3]

FOCUSED QUIZ 20
ECONOMIC GROWTH, PRODUCTIVITY, AND LIVING STANDARDS, PP. 77-81

1. A The circular flow model illustrates the set of interactions between the major sets of economic actors in our economy. [77,2,2]
2. D In the circular flow model, households provide factors of production (land, labor, and capital) to firms. In return, they receive income that they use to purchase goods and services, pay taxes, and save money. [77,2,4]
3. E Differences in average labor productivity account for most of the variation in GDP per capita. Average labor productivity depends on physical capital, human capital, natural resources, technological knowledge, and the political and legal environment. [79,2,0]
4. E Over the past few centuries, Western Europe and the United States have experienced sustained economic growth, which has led to a dramatic improvement in living standards. [77,1,4]
5. E In the circular flow model, firms receive revenue in return for selling goods and services. They use this revenue to pay households for supplying the factors of production. [77,2,4]
6. C Physical capital refers to the tools and machinery that workers use to produce goods and services. [80,1,1]
7. A Larger economies produce more output than smaller economies. However, this source of variation cannot be used to justify differences in GDP per capita. [78,2,0]
8. E Like physical capital, the creation of human capital requires sacrificing current consumption. However, one difference is that human capital is not tangible. [80,1,2]
9. B Saudi Arabia and Kuwait enjoy high standards of living due to their plentiful oil reserves. [80,1,3]
10. D Although natural resources contribute to higher productivity, easy access to them is not required to achieve high levels of per capita income. For example, Japan has been able to build wealth by importing all of its raw materials. [80,1,3]
11. D Historically speaking, advancements in technology have contributed the most to raising average labor productivity. The introduction of Henry Ford's moving assembly is an example of technological knowledge. [80,1,4]
12. D Most of the difference in standards of living between North and South Korea can be attributed to differences in government institutions. [80,2,0]
13. D If an economy invested all of its money in human and physical capital, it would have no goods and services to consume. Additionally, investments yield diminishing returns, which is another reason overinvestment is undesirable. [80,2,2]
14. D Workers accumulate human capital through education, training, and job experience. Therefore, government subsidies for college education could improve an economy's stock of human capital. [80,1,2]
15. D Households provide land, labor, and capital to firms in exchange for income. Households use their income to purchase goods and services, pay taxes, and save money. [77,2,3]

1. E To economists, the term "investment" refers to the purchase of new capital equipment. [81,1,2]
2. B Households save money through financial markets. The bond market and the stock market are two avenues of investing money. [81,1,4]
3. E When a company borrows money, it issues bonds. These bonds represent an IOU to the holders of the bonds. [82,2,0]
4. E A bond's date of maturity states when the loan will be repaid. In the interim, the company makes periodic interest payments. [82,2,0]
5. B The principal refers to the original amount of an investment. This is the amount that bonds repay on their date of maturity. [82,2,1]
6. D When a company defaults on its bonds, it means that the company has failed to make its promised payments on time. [82,2,2]
7. D Bonds with a greater risk of default and a longer time to maturity carry higher interest rates. This is to compensate investors for the additional risk they assume. [82,2,2]
8. D Stockholders assume more risk than bondholders. As compensation for this additional risk, stockholders have a greater potential for high returns. [83,1,0]
9. E Financial intermediaries connect savers to borrowers. Banks and mutual funds are two important intermediaries. [82,1,3]
10. E A bank's owners, or stockholders, bear the risk of its lending operations. Bank deposits are fully insured and therefore carry little or no risk. [82,2,0]
11. E Mutual funds provide diversification benefits to individuals who would otherwise be unable to do so themselves. Therefore, mutual funds especially benefit investors who only have a small amount of money to invest. [82,2,2]
12. A Mutual funds allow investors to achieve diversification benefits, which reduces but does not eliminate risk. All investments carry some risk. [82,2,3; 82,2,4]
13. E Equity finance refers to the sale of stock by a company. Therefore, if Costco sells stock to build a new department store, this would be considered equity finance. [81,2,3]
14. D The forces of supply and demand determine the price of a stock. [81,1,1]
15. B A company pays dividends to its shareholders when it has healthy profits. Unlike interest payments, dividends are not obligations to the company. [81,2,4]

ECON

FOCUSED QUIZ 22

SAVING AND INVESTMENT IN AGGREGATE – HOW FINANCIAL MARKETS COORDINATE SAVING AND INVESTMENT DECISIONS, PP. 82-87

DemiDec® We do our best, so you can do yours.

1. B Closed economies do not engage in international trade. Therefore, net exports are zero. [83,1,2]
2. E In a closed economy, income equals consumption expenditures plus investment plus government purchases. [83,1,1]
3. B Private saving equals income less consumption expenses less taxes. Meanwhile, government saving equals taxes less government spending. [83,1,5]
4. D If taxes exceed government spending, then the government is running a budget surplus. [83,1,5]
5. C The Brazilian- and Belgian-owned brewing company Inbev purchased Anheuser-Busch in 2008. This decreased the United States' net capital outflows because it represented a foreign purchase of domestic assets. [83,2,3]
6. E Net capital outflows increase from domestic purchases of foreign assets. Microsoft's purchase of property in German would represent a positive capital outflow. [83,2,3]
7. C In 1989, Mitsubishi purchased Rockefeller Center in New York. This decreased the United States' net capital outflows because it represented a foreign purchase of domestic assets. [83,2,4]
8. C In foreign direct investment, the buyer plans to actively manage the assets. In portfolio investment, an individual or business purchases shares of stock or bonds issued by a foreign corporation. [83,2,4]
9. A In an open economy, saving equals investment plus net capital outflows. Therefore, if net capital flows are negative, investment must exceed saving. [84,1,6]
10. C Net capital outflows equal net exports. The $1,000 worth of spirits sent to France is an export, whereas the $3,000 worth of grapes coming from Germany is an import. [83,2,5]
11. C The supply and demand graph for savings features the interest rate on the y-axis. As interest rates increase, supply increases and demand decreases. [84,2,3]
12. D The real interest rate equals the nominal interest rate less inflation. As the real interest rate increases, it becomes harder to find profitable projects, so demand for savings decreases. [84,2,5]
13. E Crowding out refers to the tendency of government deficits to reduce private investment. This is because increased government borrowing increases the interest rate. [87,1,1]
14. D If the tax rate on interest income decreases, the supply of savings increases. This increases investment and decreases the interest rate. [87,1,2]
15. A Investors will borrow money so long as their expected return exceeds the interest rate, or the cost of the borrowed funds. [85,1,1]

FOCUSED QUIZ 23

MONEY AND PRICES IN THE LONG RUN – MEASURING MONEY, PP. 87-89

1. B Even though money does not pay interest or appreciate in value, people hold onto it due to its ease in completing transactions. [87,2,2]
2. C Like money, stocks function as a store in value in that they can transfer purchasing power across time. However, stocks do not function as a medium of exchange or unit of account. [87,2,4]
3. B As a unit of account, money facilitates comparisons of economic value. This is because goods and services are all priced using the same currency. [87,2,3]
4. A Economists use the term "wealth" to describe all of the different stores of value in an economy. The assets that make up an economy's wealth can differ in their liquidity. [87,2,5]
5. A Liquidity measures the ease with which an asset can be converted into a medium of exchange. Assets that take a long time to convert into cash are considered illiquid. [87,2,5]
6. B Financial assets, such as stocks and bonds, can be converted into money fairly quickly, so they have high liquidity. [88,1,1]
7. E When the prices of goods and services are expressed in a common currency, we are seeing money function as a unit of account. [87,2,3]
8. A Unlike fiat money, commodity money holds intrinsic value. The value of fiat money is established by government decree. [88,1,2]
9. B Commodity money is a type of money that holds intrinsic value. Precious metals such as gold and silver are examples of commodity money. [88,1,2]
10. E During World War II, prisoners used cigarettes as a medium of exchange. This would be an example of commodity money because cigarettes hold intrinsic value. [88,1,2]
11. B Credit cards are not considered money because they represent a way of putting off a payment. However, credit cards do reduce an economy's need for money because people do not need to carry currency with them at all times. [88,2,3]
12. A Fiat money's value is established by government decree. In contrast, commodity money holds intrinsic value. [88,1,2]
13. A Assets in M1 and M2 differ in their liquidity. M1 assets are more liquid than M2 assets. [88,2,2]
14. C Together, M1 and M2 constitute the stock of money in an economy. [88,2,2]
15. E M2 assets include all of M1 plus savings deposits, small denomination time deposits, and retail money funds. [88, Figure 46]

1. B Central banks are responsible for overseeing the banking system and regulating the money supply. In the United States, the Federal Reserve acts as the central bank. [89,1,1]
2. D The Federal Reserve's board of governors consists of seven members. These members, along with five regional bank presidents, make up the Federal Open Market Committee. [89,1,2]
3. C The New York Fed president is always a member of the FOMC. The other four spots on the FOMC rotate among the remaining regional banks. [89,1,4]
4. B The FOMC meets every six weeks to discuss any adjustments needed to monetary policy. The FOMC is composed of the seven governors of the Fed and five regional bank presidents. [89,1,4]
5. E When the Federal Reserve wants to increase the money supply using open market operations, it purchases U.S. government bonds. This increases the amount of currency held by the public. [89,1,5]
6. E A bank's assets consist of reserves and loans. Meanwhile, deposits comprise the bank's liabilities. [90,1,1]
7. A Banks that use fractional reserves can make the economy more liquid by creating more money. However, this increased money supply does not translate to increasing the total amount of wealth in an economy. [90,1,1]
8. C High-powered money includes currency and reserves. It is also known as the monetary base in an economy. [90,2,3]
9. B The money multiplier is calculated as the reciprocal of the reserve ratio. It represents the amount of money created from each dollar of reserves. [90,2,1]
10. C Although adjusting reserve requirements is a powerful tool at the Fed's disposal, the Federal Reserve rarely chooses to do so because it is disruptive to the banking industry. [91,1,1]
11. C The discount rate is the interest rate that the Federal Reserve charges on loans made to banks. It is closely tied to the federal funds rate, which is the rate that banks charge each other for lending reserves. [91,1,2]
12. D The Federal Reserve can decrease the money supply by raising reserve requirements, selling U.S. government bonds, and increasing key interest rates. [91,1,2]
13. E If a bank reaches $200 in total deposits from an original deposit of $50, then the reserve ratio equals 0.25. Accordingly, the money multiplier equals 4. [90,2,1]
14. B If a bank's assets exceed its liabilities, the bank is considered solvent. However, even solvent banks do not have enough cash on hand to withstand bank runs. [91,2,1]
15. E The Federal Reserve can directly affect the discount rate. Movements in the discount rate influence the federal funds rate. [91,1,2]

1. B Although the price level generally rises in an economy, the U.S. has experienced a few periods where the price level fell. During the Great Depression, prices fell 25%. [92,1,1]
2. A Although the price level generally rises in an economy, the U.S. has experienced a few periods where the price level fell. Two notable examples are the Great Depression and the 2008 financial crisis. [92,1,1]
3. D Typically, inflation happens when more money is chasing the same amount of goods. In that sense, inflation reflects a reduction in the value of money rather than an increase in the value of goods. [92,1,2]
4. D The Federal Reserve can adjust the money supply through open market operations. Fractional reserve banking amplifies these effects. [92,1,3]
5. D Like other items in an economy, money's value is derived by supply and demand interactions. When the supply of money increases, the value of money decreases. [92,1,3]
6. B With the advent of mobile payment solutions such as Apple Pay, people have less incentive to carry cash on them. As a result, these technologies decrease the demand for money. [92,2,1]
7. C As the value of money decreases, people need more money to buy goods, which is reflected as an increase in demand for money. [92,2,3]
8. B When the Federal Reserve purchases government bonds, the supply of money increases. This will increase the demand for goods and services, which results in higher prices. [94,1,1]
9. A The neutrality of money reflects the fact that changes in the quantity of money have no effect on real quantities in the economy in the long run. [94,1,3]
10. E Real quantities are measured in physical units. Meanwhile, nominal quantities are measured in monetary units, such as the price of milk. [94,1,3]
11. C The velocity of money is the number of times a dollar bill is used during a year. According to the quantity equation, the money supply times the velocity of money equals nominal GDP. [94,2,1]
12. A According to the quantity equation, the money supply times the velocity of money equals nominal GDP. Nominal GDP can be defined as the price level times real output. [94,2,3]
13. A According to the quantity theory, an increase in the money supply can result in a decrease in the velocity of money, an increase in real GDP, or an increase in the price level. An increase in the money supply is also associated with falling interest rates. [94,1,0; 94,2,4]
14. B Although inflation does not alter relative prices, it does impose several costs on an economy, which is why central banks seek price stability. [95,1,1]
15. E According to the quantity equation, the money supply times the velocity of money equals nominal GDP. Therefore, if nominal GDP is $2,000 and the supply of money is $500, the velocity of money = $2,000/$500 = 4. [94,2,2]

1. A According to the National Bureau of Economic Research, a recession represents a period between a peak and a trough in economic activity. A depression represents a severe recession. [96,1,2]
2. C The business cycle refers to the recurrent alternation between peaks and troughs in economic activity. [96,1,3]
3. B For a recession to occur, real GDP growth must decline for at least two consecutive quarters. The longest recession in United States history, the Great Depression, lasted 43 months. [96,2,0]
4. C The National Bureau of Economic Research determines the official start and end dates of expansions and recessions in the United States economy. [96,2,0]
5. D During a recession, unemployment increases. Because businesses are slow to hiring when economic activity picks up, declines in unemployment often lag the onset of expansions. [96,2,4]
6. B Potential output refers to the quantity of goods and services that the economy can produce when using its resources at normal rates. Potential output can increase due to technological advancements or the accumulation of additional resources. [98,1,1]
7. D The output gap is defined as the difference between actual output and potential output. This expression is denoted as Y – Y*, where Y represents actual output, and Y* represents potential output. [98,2,1]
8. B The natural rate of unemployment is the level of unemployment that would exist if the output gap was zero. It consists of frictional unemployment and structural unemployment. [99,1,0]
9. B As more women entered the paid workforce in the 1970s, the natural rate of unemployment increased. In recent years, the natural rate of unemployment has decreased. [99,1,1]
10. B Arthur Okun was a chief economic advisor to President Kennedy. He devised Okun's Law, which states that a 1% increase in unemployment is associated with a 2% drop in GDP. [99,2,1]
11. B Okun's Law describes the relationship between the output gap and cyclical unemployment. According to Okun's Law, a 1% increase in cyclical unemployment is associated with a 2% increase in the output gap. [99,2,1]
12. C Growth in potential output depends on technological advancements, growth in the population, and growth in the country's productive resources (labor and capital). [100,1,0]
13. B If prices adjusted immediately to supply and demand, actual output would always equal potential output. However, in the short run, firms adjust production rather than prices. [100,2,0]
14. B John Maynard Keynes developed his economic model in response to the failure of existing microeconomic models to fully explain the events of the Great Depression. [101,2,1]
15. B In the Keynesian model, the x-axis represents real GDP, and the y-axis measures the aggregate price level. [101,2,2]

1. A When the aggregate price level decreases, the prices of all goods go down. Therefore, the explanation for the downward-sloping demand curve in microeconomic analysis no longer holds for the Keynesian model. [101,2,4]
2. A When the price level decreases, people find that they are holding onto too much money and invest their extra money in less liquid assets. This increase in the supply of savings lowers the interest rate, which incentives people and firms to borrow money. [102,1,2]
3. D When the domestic price level decreases, it becomes relatively cheaper for foreigners to purchase domestic-produced goods. Therefore, exports increase. [102,1,3]
4. A Elon Musk's SpaceX company has been building a network of internet satellites to provide internet around the world. Technologies like these incentive firms to increase investment spending. [102,1,4]
5. E Elon Musk's SpaceX company has been building a network of internet satellites to provide internet around the world. Technologies like these incentive firms to increase investment spending. [102,2,0]
6. C If interest rates increase, firms are less likely to borrow money. As a result, aggregate demand decreases due to decreased investment spending. [102,1,4]
7. A In microeconomic analysis, the supply curve was upward sloping to reflect that as the price of a good increases, suppliers find it more profitable to divert their resources toward the production of that good. [102,2,3]
8. D The Keynesian model represents short-term aggregate supply as an upward-sloping line. In contrast, the long-run aggregate supply is a vertical line. [102,2,3]
9. E Resources are fully employed where the short-run aggregate supply curve intersects potential output. [103,1,1]
10. C As the real foreign exchange rate fluctuates, the relative price of domestically produced goods to foreigners also changes, which will influence a country's amount of exports and imports. [102,1,3]
11. E In the Keynesian model, aggregate supply shifts up when the expected price level increases. [103,2,0]
12. A The 1973 OPEC oil embargo was an example of an aggregate supply shock. Because the U.S. economy heavily relied on oil, aggregate supply shifted to the left. [103,2,1]
13. D Holding the velocity and quantity of money constant, a lowered price level will increase real GDP. This fact is proven true by the quantity equation of money. [102,1,1]
14. C Consumer sentiment, fiscal policy (government spending and taxation), monetary policies (interest rates), and the introduction of new technologies all have an effect on aggregate demand. Long-run potential output determines the position of the aggregate supply curve. [102,1,4]
15. C Potential output reflects the productive capacity of an economy if resources are fully employed. Therefore, as an economy's productive capacity increases, potential output shifts to the right. [104,1,1]

ECON

FOCUSED QUIZ 28

THE KEYNESIAN MODEL – USING FISCAL AND MONETARY POLICY, PP. 104-109

DemiDec®
We do our best, so you can do yours.

1. E If the aggregate demand curve shifts to the left, the actual price level will be below the anticipated price level. Over time, firms will adjust their price expectations downward, causing prices to fall until output returns to potential. [104,2,0]
2. E The short-run aggregate supply curve shifts to the left in a negative supply shock. This creates a negative output gap, as AD intersects AS at a point to the left of potential output. [104,2,1]
3. D The short-run inflexibility of prices explains recessions and expansions in the Keynesian model. If prices adjusted immediately, actual output would always equal potential output. [104,2,2]
4. E The intersection of aggregate demand and short-run aggregate supply in the Keynesian model determine aggregate production and price level. [104,1,2]
5. C According to the quantity equation, P = (M x V)/Y*. Therefore, holding the velocity of money constant, the change in the price level equals the change in money supply less the change in potential output. [107,2,1]
6. E If an economy perfectly anticipates the level of inflation, then the output gap will equal zero. Deviations from potential output occur due to unexpected shocks. [108,1,1]
7. B Expansionary fiscal policy occurs when the government enacts policies designed to stimulate the economy. Increased government spending is a textbook example of expansionary fiscal policy. [108,2,0]
8. E During recessions, the government may lower taxes to stimulate consumer spending. Lower taxes translate to higher disposable income for consumers, which allows them to spend more money. [108,2,1]
9. E To slow down an economy producing above its potential, the Federal Reserve could raise interest rates. This action would cause firms and consumers to reduce spending. [108,2,2]
10. E If an economy has an output gap of zero, that means the aggregate demand curve intersects the short-run aggregate supply curve at a point on the long-run aggregate supply curve. [104,1,2]
11. A Fiscal and monetary policy are controversial because the effects of their actions take time to be felt. In fact, they can be counterproductive when the effects don't kick in until after an economy has already recovered on its own. [109,1,1]
12. B In the 1960s, President Johnson financed a military buildup through government borrowing. This is an example of expansionary fiscal policy. [108,1,2]
13. C The Federal Reserve varies the money supply to influence interest rates. When the money supply decreases, interest rates increase. [108,2,2]
14. B In the Keynesian model, an increase in the money supply causes aggregate demand to shift to the right. However, if the population fully expects this, short-run aggregate supply will shift upward to keep the economy at potential output. [108,1,1]
15. E Fiscal and monetary policy are controversial because the effects of their actions take time to be felt. In fact, they can be counterproductive when the effects don't kick in until after an economy has already recovered on its own. [109,1,3]

1. A Jamestown, in present-day Virginia, was the first British settlement to flourish in what is now the United States. It was founded in 1607. [111,1,1]
2. C Permanent British colonization of the present-day United States began with Jamestown in 1607, in the first decade of the seventeenth century. [111,1,1]
3. D Between the stated dates, real per capita income more than doubled, rising "by a factor of 2.5" over seventy years. [111,1,1]
4. E Mercantilist theory proposed that economic strength was the ideal way to gain political strength. A wealthy nation, the theory went, would have more options for gaining supremacy over a poor one. [111,2,1]
5. D Mercantilism had the most adherents in the colonizing nations of Europe. By the 1700s, mercantilism was a dominant strain of economic thought among European powers. [111,2,1]
6. C The first persistent settlement in British North America, Jamestown, was part of the Colony of Virginia. Today the archaeological remnants of Jamestown remain within Virginia's borders. [111,1,1]
7. E Mercantilism emphasized economic and thus political dominance over other nations. It was far more concerned with international trade over trade within national borders. [112,1,1]
8. C Mercantilist theory sought to maximize a nation's exports while minimizing its imports. The imported textiles, then, would be less desirable than goods that could be made domestically. [112,1,1]
9. C Mercantilist policies emphasized exports for money (at the time, gold and silver) while minimizing imports. Successful application led to nations accumulating precious metals like a dragon increasing its hoard. [112,1,1]
10. A Adam Smith pointed out that wealth is what money can buy, rather than money itself. Merely holding onto precious-metal coins was a waste of wealth's possibilities. [112,1,1]
11. E Adam Smith's *The Wealth of Nations,* a foundational text of modern economics, was published in 1776. That year is famous in United States history for the signing of the Declaration of Independence. [112,1,1]
12. C In the 1500s, the Spanish Empire extracted huge amounts of gold and silver from what is now called Latin America. A mercantilist drive to find its own sources of gold and silver was a key motive for British colonization as well. [112,1,2]
13. D Britain used its colonies as sources of raw materials and markets for finished goods. The creation of export goods, however, was a source of mercantilist gain and thus largely reserved to Britain itself. [112,1,2]
14. E Multiple major groups of people were excluded from the economic gains of the early nineteenth century. Indigenous and enslaved persons faced exploitation rather than enjoyment of gains, for example. [111,1,2]
15. B Though Jamestown was the first British North American settlement to last, in its early years the Virginia colony struggled to survive. Had it collapsed entirely, history might have turned out very differently. [111,1,1]

1. C The first of the Navigation Acts was passed in the mid-seventeenth century; in other words, around 1650 (1651, to be exact). [112,2,0]
2. C The Navigation Acts were meant to make the British Empire self-sufficient, not depending on other nations to meet its needs for raw materials and other goods. [112,2,1]
3. D The Navigation Acts, in accord with mercantilism, treated the colonies as suppliers of raw materials such as timber, as well as foodstuffs such as rice. [112,2,1]
4. A Enumerated goods could only be exported to England. Goods meant for Europe outside Britain had to pass through a British port first. [112,2,2]
5. B Because enumerated goods had to pass through an English (later British) port regardless of their final destination, seaports such as London and later Liverpool thrived thanks to the Navigation Acts. [112,2,2]
6. C Consumer surplus measures the benefits a consumer receives as a result of paying less for a good than the maximum they were willing to pay. The $5 gap in the example is an example of consumer surplus. [113,1,1]
7. C Producer surplus is the benefit a producer receives from selling a good at a price greater than the minimum price the seller would accept. [113,1,1]
8. E Thomas's analysis rests on concepts of consumer surplus and producer surplus. These concepts come from the field of welfare economics. [113,1,1; 113,1,2]
9. B A scenario in which at least one element of reality is altered is counterfactual. Robert P. Thomas used a counterfactual scenario to analyze the impact of the Navigation Acts. [113,1,2]
10. C The import burden of the Navigation Acts is how much they cost consumers. Thomas used a counterfactual example to measure the Acts' reduction in consumer surplus. [113,1,2]
11. E Thomas found the Navigation Acts imposed a nominal annual net cost of around 41 cents per person in the colonies. On a percentage basis, this is under 1% of annual income. [113,2,0]
12. A Robert P. Thomas found the net cost of the Navigation Acts to be under 1% of colonists' annual income per capita, just 41 cents nominally. This suggests the Navigation Acts did not impose hardship on the average colonist. [113,2,0]
13. B British military protection for British colonies was a tangible benefit (at least until the colonies rebelled). Robert P. Thomas counted this protection as a benefit that mitigated the Navigation Acts' costs. [113,2,0]
14. A The counterfactual world without the Navigation Acts reduced the export burden on American sellers. This reduced burden would allow producer surplus to rise. [113,1,2]
15. C The burden of the Navigation Acts fell unevenly on American colonists based on their sources of income. A baker, for example, would experience less of a burden than a dealer in tobacco, an enumerated good. [113,2,0]

FOCUSED QUIZ 31
COLONIAL INCOMES, GROWTH-SUPPORTING INSTITUTIONS, PP. 113-114

1. B Allen *et al.* (2012) characterize a welfare ratio as measuring to what extent “a man working full time could support a family at the ‘bare bones’ level of consumption.” [113,2,1]
2. B Allen *et al.* (2012) found colonial Philadelphia’s unskilled workers well-compensated, with a wage-based welfare ratio 25% higher than that of contemporary London. [113,2,1]
3. D In the 1770s, wages for unskilled laborers in Boston were comparable to those in London. This was about 20% lower than the wages unskilled laborers commanded in Philadelphia. [113,2,1]
4. E Allen *et al.* (2012) used welfare ratios to compare effective wages in London, Boston, and Philadelphia during the colonial period. They also compiled data for the colony of Maryland. [113,2,1]
5. E Mercantilist policy treated colonies as sources of raw materials. An abundance of natural resources, such as good soil for agriculture, allowed a colony and its people to become relatively prosperous. [113,2,2]
6. B The colonies that later became the United States experienced rapid population growth overall. This created large internal markets for goods that interacted with resource abundance to promote prosperity. [113,2,2]
7. D Economic institutions are organizations or principles that regulate economic activity. Laws and social customs are examples of the latter type of economic institution. [113,2,2]
8. D The original form of Jamestown did not include private property rights, creating disincentives to be productive. Within a few years, Jamestown introduced these incentives. [114,1,1]
9. C The original chartered form of Jamestown did not reward hard work through private property rights. Instead, payouts were by share, which created crises of work. [114,1,1]
10. E The main source of technology used in the American colonies and nascent United States was Europe. Later the United States began to develop its reputation for world-changing inventions. [114,1,2]
11. A The early United States established protections for new inventions, such as patents. In fact, protections for inventors are mentioned specifically in the U.S. Constitution in Article I, Section 8. [114,1,2]
12. B Samuel Morse’s most famous invention is the telegraph, a form of long-distance communication. He is the namesake of a system used alongside the telegraph, Morse code. [114,1,2]
13. C Elias Howe invented the lockstitch sewing machine, receiving a patent in 1846. He later used that patent to defend his invention against infringement by the more famous Isaac Singer and others. [114,1,2]
14. A Thomas Edison received 1,084 U.S. patents related to inventions over the course of his career. Many of the patents concern improvements to iconic inventions such as the phonograph and incandescent lamp, or light bulb. [114,1,2]
15. C The radio comes last in the list, with Thomas Edison patenting a ship-to-shore wireless telegraph system that was a forerunner to radio in 1891. [114,1,2]

1. A Chesapeake Bay is off the eastern coast of present-day Virginia. The James River, on which Jamestown was settled, flows into Chesapeake Bay. [114,1,3]
2. A The soils of Virginia proved good for growing tobacco for export. It swiftly became Virginia's key trade crop. [114,1,3]
3. C Tobacco required less capital expenditure than rice to produce. This translated into smaller farms being viable for tobacco production compared to rice production. [114,1,3]
4. B The Virginia Company was the first to introduce indentured servitude in British North America, shortly after Jamestown's 1607 founding. The system offered a harsh deal: years of labor in exchange for passage across the Atlantic Ocean. [114,1,4]
5. A Indenture contracts as used in British North America laid out a deal: get passage from England to a colony now and work it off through a number of years of labor. [114,1,4; 114,2,0]
6. D Ship captains incurred upfront costs by providing passage from England to a colony in exchange for an indenture contract. Selling those contracts to landowners and others already in the colonies allowed captains to turn a profit. [114,2,0]
7. C As economic conditions improved in England and later Britain, fewer people chose indentured servitude. Landowners seeking labor turned to slavery, especially the enslavement of African peoples. [114,2,1]
8. B Rice cultivation was largely limited to the southernmost colonies in the future United States. Georgia and South Carolina were the two most prominent rice exporters. [114,2,2]
9. B Unlike Southern plantation-style agriculture, farms in New England and the Mid-Atlantic region tended to be smaller and independent. They also focused on grains and livestock rather than cash crops for export. [114,2,3]
10. E The 1790 Census returned a total population of just under 4 million people. Of those, around 700,000, over one-sixth of the total population, were enslaved. [115,1,2]
11. C Out of just under 4 million people counted in the 1790 Census, around 700,000 were enslaved. This was the highest proportion of enslaved persons recorded in a U.S. Census. [115,1,2]
12. D A Gini coefficient provides a measure of how widely income or wealth is distributed in a population. A coefficient of 0 indicates perfectly even distribution, while a coefficient of 1 indicates a single individual holding all income or wealth. [115,1,3]
13. D The line of perfect equality is straight and diagonal, running evenly between 0% of the population having 0% of income and 100% of the population having 100% of income. Uneven distribution results in a Lorenz curve of varying steepness. [115,1,4]
14. B In a visual representation of the Lorenz curve, A is the area between the line of perfect inequality and the Lorenz curve, and B is the area under the Lorenz curve. The formula A / (A+B) measures how much area is marked off by the inequality represented by the Lorenz curve, or the Gini coefficient. [115,2,1; Figure 60]
15. E Lindert and Williamson (2016) calculated a Gini coefficient of 0.441 for colonial America. This indicates greater equality of income than in the present-day United States, even though over 17% of the population were enslaved persons deprived of all but the meagerest income. [115,2,2]

1. C The Seven Years' War was a major conflict that played out between Great Britain (so named after the union between England and Scotland in 1707) and France. It ended with the Treaty of Paris in 1763. [116,1,1]
2. E France and Great Britain were the main rivals in colonizing North America in the mid-17th century. France's legacy remains in place names such as Louisiana and the French-speaking Canadian province of Quebec. [116,1,1]
3. B The Appalachian Mountains proved a *de facto* boundary to westward British colonization in what is now the United States. Among the causes of the Seven Years' War was a push by the French to colonize the Ohio River Valley. [116,1,1]
4. E After the expenditures of fighting the Seven Years' War, the British tried raising taxes on North American colonists. The escalating series of taxes was a directly contributing factor to the American Revolution. [116,1,2; 116,2,0]
5. A The British Parliament passed the Sugar Act (1764), Stamp Act (1765), Townshend Acts (1767), and Tea Act (1773) to raise revenue from British North America after the Seven Years' War. The Molasses Act dates to 1733; the Sugar Act was its replacement. [116,2,1]
6. E Charles Townshend was Chancellor of the Exchequer, or leader of the Treasury, for Great Britain from August 1766 to his death in September 1767. The Acts bearing his name became infamous after his death. [116,2,1]
7. E The Revenue Act 1767, one of the Townshend Acts, placed taxes on tea, glass, paper, and two types of lead. Cloth was not among the goods singled out in the Townshend Acts. [116,2,1]
8. D The Sugar Act, which replaced the Molasses Act, lowered nominal taxes on molasses. Because smuggling was so prevalent in British North America, however, stricter enforcement was a plausible way of raising revenue generated. [116,2,1]
9. A The Stamp Act of 1765 required printed documents such as newspapers to be on British-produced paper bearing a revenue stamp, hence the name. The controversial Stamp Act drew protests and was repealed the following year. [116,2,1]
10. D The British East India Company (EIC) effectively ruled the Indian subcontinent in the 1770s. A credit crisis led the EIC to ask the British government for favors related to the tea trade, resulting in the Tea Act of 1773. [116,2,2]
11. E The Boston Tea Party took place on 16 December 1773. The Intolerable Acts passed the next year in response to the Boston Tea Party were a major cause of the American Revolution. [116,2,2]
12. C The Tea Act gave the British East India Company a monopoly on the tea trade in British North America. This act eliminated the need for colonial tea importers, destroying their livelihoods. [116,2,2; 117,1,0]
13. E The destruction of tea during the Boston Tea Party cost surprisingly little in present-day nominal terms, around US$1.6-1.7 million. As a point of comparison, damage during the 2011 Stanley Cup riots in Vancouver was around US$5.7 million in present-day nominal terms. [117,1,0]
14. C British authorities ordered the port of Boston closed until the owners of the destroyed tea received compensation for it. Other measures followed, pushing the American colonies toward revolution. [117,1,1]
15. A The Continental Congress, specifically the First Continental Congress, convened in response to the British backlash from the Boston Tea Party. It drafted its Petition to the King, laying out its grievances, in October 1774. [117,1,2]

1. B The breakout of armed conflict between Great Britain and the American colonies took place on 19 April 1775 with the Battles of Lexington and Concord in Massachusetts. [117,2,1]
2. B The British maintained a naval blockade of the rebel colonies throughout the American Revolutionary War. This cut down sharply on international trade. [117,2,1]
3. D Limited trade with France was a vital source of imported goods for the American colonies despite the British naval blockade. Spain and Holland were also important trade partners. [117,2,1]
4. A Import substitution is the replacement of foreign imported goods with domestic substitutes. Rebellious American colonies turned to import substitution in response to British naval blockades. [117,2,1]
5. A Walton and Rokoff are quoted as writing that “nearly 4,000 women” in Philadelphia took home employment, spinning fibers for the burgeoning domestic textile industry. They supplied labor in response to new demand. [117,2,1]
6. E Walton and Rokoff noted a Revolutionary-era rise “in the production of beer, whiskey, and other domestic alcoholic beverages” for individuals well over Decathlete age. This rise came in part from American agriculture producing grains and grapes in abundance. [117,2,1]
7. B Shays’ Rebellion took place in the western part of Massachusetts, particularly in the Springfield area. Shays’ followers attempted to seize a federal armory at Springfield after disrupting the workings of state courts. [118,1,0]
8. E Daniel Shays, formerly a captain in the Continental Army, returned to civilian life as a landless agricultural laborer. His military service went unpaid, and legal woes over his debts led Shays to begin Shays’ Rebellion. [118,1,0]
9. E Shays and his followers were largely indebted farmers and farm laborers. They targeted the courthouses that gave them legal trouble over their unpaid debts. [118,1,0]
10. B Shays and his followers attempted to take over the federal armory in Springfield, Massachusetts. The federal government’s difficulty in responding to this threat may have contributed to the strong federal government laid out in the U.S. Constitution. [118,1,0]
11. E Between the damage from war and disruptions to international trade, the United States experienced a roughly 20% decrease in real income between 1774 and 1800. The 1790-1800 period had a slow recovery. [118,1,1]
12. D Lindert and Williamson considered the fall in real income per capita between 1774 and 1800 “nearly as big an economic disaster as the 1929-1933 drop in the Great Depression.” [118,1,1; 118,2,0]
13. C Between the naval embargoes by the British during the American Revolutionary War and the disruptions that resulted from the Napoleonic Wars, trade between the new United States and other countries suffered greatly between 1774 and 1800. [118,2,0]
14. D The United States Constitution, which replaced the Articles of Confederation, provided the institutional framework for the future growth of the United States. Its patent and copyright protections are only two examples of its economic importance. [118,2,1]
15. E Protesters in what became Shays’ Rebellion shut down the first courthouse on 29 August 1786. The rebellion collapsed in early February 1787, after the attempt to seize the federal armory in Springfield failed. [117,2,2]

1. A The Articles of Confederation were ratified in 1781. That same year, the Battle of Yorktown (or Siege of Yorktown) decisively broke British attempts to retake the revolutionary American colonies. [118,2,2]
2. D The Articles of Confederation divided the federal Congress's requests for revenue among the various states by their white population. Enslaved and free Black persons did not "count" toward the calculations. [118,2,2]
3. E Under the Articles of Confederation, the federal government could only request, not compel, funds from taxation. This lack of authority contributed to the Articles' replacement. [118,2,2]
4. D While Congress under the Articles of Confederation could request money, it could not compel the various states to cough up the cash. This made funding federal works fraught at best. [118,2,2]
5. A Because states benefited from the federal government under the Articles of Confederation but had no specific reason to fund it, this created a free-rider problem. Congress chronically lacked funding as a result. [118,2,2]
6. A Each state received a single vote in Congress under the Articles of Confederation, though delegation sizes were unequal, and all votes had to be unanimous. In effect, each state had veto power over federal decisions. [118,2,3]
7. A An impost is a duty or fee on imports. The U.S. federal government struggled to levy imposts under the terms of the Articles of Confederation. [119,1,0]
8. A The "ten-dollar Founding Father," as Lin-Manuel Miranda described him in *Hamilton,* Alexander Hamilton served as the first U.S. Secretary of the Treasury. He also helped found the nation's first central banks. [119,2,caption]
9. A The 5th Amendment holds, among other protections, that "No person shall be ... deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation." [119,1,1]
10. E Section 1 of the 14th Amendment reads in part, "nor shall any State deprive any person of life, liberty, or property, without due process of law;" this echoes the language of the 5th Amendment but applies it to state governments as well. [119,1,1]
11. D Article I, Section 8 of the United States Constitution gives Congress the power "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries"; in other words, patents and copyrights. [119,1,1]
12. C The original version of the United States Constitution counted enslaved persons as "three-fifths of a person" for Congressional representation. The enslaved persons, of course, could not vote, and the so-called "Three-Fifths Compromise" is infamous for good reason. [119,1,2; 119,2,0]
13. D The original form of the United States Constitution continued slavery but allowed for a possible ban on the importation of enslaved persons after twenty years, or two decades. This passed at the twenty-year mark, in 1808. [119,2,0]
14. E Delegates at the United States Constitutional Convention elected George Washington to preside. Washington later became the first U.S. President under the Constitution. [119,1,caption]
15. E Heckelman and Dougherty (2013) analyzed delegate voting patterns at the United States Constitutional Convention. They found that personal financial interests, enslaving included, influenced delegates' votes. [119,2,0]

1. D Alexander Hamilton served as the first Secretary of the Treasury under the United States Constitution. As Secretary, he developed and implemented key elements of the nascent United States financial system. [119,2,1; 120,1,0]
2. C During the American Revolutionary War, the federal government printed many dollars to pay for materials and cover debts. Inflation devalued the currency, leading to the expression, “not worth a Continental.” [119,2,1]
3. D Under Treasury Secretary Alexander Hamilton, the federal government took on or assumed the debts of the various states. This relieved the states but created a sizable burden on the federal government. [120,1,0; 120,1,1]
4. D Alexander Hamilton’s 1783 estimates put the United States federal debt at around $54 million and states’ debt at another $25 million. This is a ratio of 2.16:1. [120,1,1]
5. B Alexander Hamilton believed establishing credit for the United States was key to making it a functional and trustworthy nation. Exchanging war bonds for new bonds was a key step in paying off the new nation’s debt. [120,1,1]
6. D As Treasury Secretary, Alexander Hamilton set up a dedicated fund for paying off the interest on the United States national debt. This helped the nation pay down the debt over time. [120,1,1]
7. C In 1792, the United States public debt was at $80.4 million. This figure was over one-third of national GDP; paying off interest consumed over two-thirds of federal spending. [120,1,2]
8. A In 1792, the United States' public debt was around 36% of GDP. That makes one-third (or a smidge over 33.3%) the correct answer. [120,1,2]
9. A Between 1792 and 1810, the nominal United States public debt fell from over $80 million to around $48 million. This meant the government was paying off principal, not merely paying interest. [120,1,2]
10. C Between 1792 and 1810, interest payments on the United States public debt fell from two-thirds of federal spending to one-third. A reduction in the public debt and better interest rates contributed to this decrease. [120,1,2]
11. D Philadelphia was the national capital when the First Bank of the United States was founded in 1791. Philadelphia was still the national capital in 1797, when the headquarters of the First Bank opened. [120,2,caption]
12. C The First Bank of the United States was structured according to the model laid out by the Bank of England. The Bank of England, founded in 1694, still exists today and is the sole issuer of banknotes for England and Wales. [120,1,3; 120,2,0]
13. C The First Bank of the United States had features of both central banks and commercial banks. Though it held United States government funds, it also accepted deposits from and made loans to the general public. [120,2,0]
14. C The First Bank of the United States was founded in 1791 with a 20-year charter. It proved controversial during that initial chartered period and accumulated considerable opposition in Congress. [120,2,0]
15. A When the charter for the First Bank of the United States came up for renewal, Congress voted against it. Without a charter, the bank could not operate, and it closed in March 1811. [120,2,0]

FOCUSED QUIZ 37
MONEY IN THE NEW NATION, LAND DISTRIBUTION POLICIES, PP. 120-121

1. A The United States Constitution authorizes Congress “To coin Money, regulate the Value thereof, and of foreign Coin...” This power went into practice with the Coinage Act of 1792, which established the United States Mint. [120,2,1]
2. D The bimetallic standard was a recommendation of Alexander Hamilton, first United States Secretary of the Treasury. The idea had merit, but the particulars of its execution led it to fall apart. [120,2,1]
3. E Alexander Hamilton’s vision of bimetallism allowed silver to be the main metal for coinage used in small transactions, as low as five cents. Gold could then serve as the metal for coins in high-value transactions. [120,2,1]
4. A For silver and gold coins, the Coinage Act of 1792 specified the amount of metal for each in terms of grains. The grain, a unit that is equal in the Troy and avoirdupois systems, is the equivalent of 64.79891 milligrams in SI units of mass. [120,2,1]
5. B The Coinage Act of 1792 specified a largely decimal system for United States coinage based around powers of ten. An “eagle” was ten dollars, just as the disme (later “dime”) was one-tenth of a dollar and a cent one-hundredth of a dollar. [120,2,1; 121,1,0]
6. C Under Hamiltonian bimetallism, the official exchange rate was 15 Troy ounces of silver to one Troy ounce of gold. A drift in the actual exchange rate created arbitrage opportunities to exploit the United States Mint. [121,1,0]
7. C Because Hamiltonian bimetallism had a fixed rather than floating ratio of the values of silver and gold, as soon as the market ratio drifted away from the official ratio, silver became overvalued relative to gold and drove gold out of the monetary system. [121,1,1]
8. B Because silver was overvalued relative to gold by the official ratio set by Hamiltonian bimetallism, it remained in the money system, while gold did not. This put the United States on a *de facto* silver standard until 1834. [121,1,1]
9. D The Coinage Act of 1834 reset the official silver-to-gold ratio and placed the United States on a *de facto* gold standard. This ended the failed Hamiltonian bimetallism that lived on for three decades after Hamilton died. [121,1,1]
10. E The United States acquired land west of the Mississippi River as part of the 1783 Treaty of Paris. This was in the Western diplomatic sense; Indigenous peoples living on that land had different opinions on the subject. [121,1,2]
11. D Colonial-era New England’s township system provided the blueprint for townships between the Appalachian Mountains and the Mississippi River. The rectangular shapes of many counties are a result, directly or indirectly, of townships. [121,1,2]
12. B The Land Ordinances of 1785 and 1787 governed the sale of land between the Appalachian Mountains and Mississippi River. Sales helped raise funds for the federal government. [112,2,1]
13. A Townships were further subdivided into sections of one square mile each. One square mile equals 640 acres. [112,2,1]
14. E The minimum auction price for a section of land after the Land Ordinances was $1 per acre, or $640 per section. This put land purchases out of reach for many would-be pioneers. [112,2,1]
15. B Under the terms of the Homestead Act, anyone claiming land only had to pay a flat registration fee regardless of the land parcel size. As adding an acre did not increase the total cost, the marginal cost per acre was zero. [112,2,1]

1. B Turnpikes were toll roads, generally built into the interior of North America from U.S. settlements closer to the East Coast. The word "turnpike" lingers on in the names of several contemporary toll roads. [122,1,1]
2. B The Boonesborough or Boonesboro Turnpike operated in western Maryland in the 1800s. It was part of a Baltimore-to-Cumberland chain of roads that led to the National Road or Cumberland Road into the North American interior. [122,1,caption]
3. C Most U.S. turnpikes were built in the New England region. A majority of turnpikes, some 60% nationwide, operated in those states. [122,1,1]
4. A In 1830, turnpike investment as a percentage of GDP was over 6%, more than the comparable GDP percentage dedicated to the Interstate highway system in the second half of the 1900s. [122,1,1]
5. D The Salem Turnpike, the most profitable turnpike in Massachusetts, yielded an average dividend of around 3.1% over a 60-year period. Many other turnpikes lost money or collapsed as business entities. [122,1,1]
6. D The Erie Canal was the first major canal completed in the United States. Its construction linked the U.S. East Coast with the Ohio Valley by water. [122,1,2]
7. B The Erie Canal crosses New York state, linking the Hudson River and Lake Erie. The Hudson River flows into the Atlantic Ocean, connecting it with the Great Lake. [122,1,2]
8. E Construction on the Erie Canal began on July 4, 1817, in Rome, New York. The official completion date was October 26, 1825. [122,2,0]
9. A Surprisingly, the Erie Canal was only four feet deep, which is closer to one meter (just over three feet) than two meters (slightly over six feet). [122,2,0]
10. E Unlike turnpikes, many of which were privately owned, canals were largely financed by state governments. Building the Erie Canal, for example, was a decades-long point of political contention in New York state. [122,2,1]
11. A Despite being only four feet deep, the Erie Canal accommodated wide, flat boats that could transport 30 tons of cargo. This dramatically reduced shipping costs along the canal route. [122,2,0]
12. D Because they did not depend on existing waterways, railroads could go where canals could not. Further, railroads were cheaper to build than canals were to dig. [122,2,1]
13. D Robert Fulton, an American-born engineer, had a longstanding fascination with steam power and ships. These interests combined to lead him to invent the steamboat in the early 1800s. [122,2,2]
14. B Robert Fulton's first steamboat is best known as the *Clermont.* Fulton called it the *North River Steamboat;* the name *Clermont* first appears in a biography published after Fulton's death. [122,2,2]
15. D Steamboats could travel upstream, or against a river current, much more efficiently than other ships or boats. This led to a dramatic decrease in costs for upstream river transportation of cargo. [122,2,2]

1. D After the first commercially viable steam-powered locomotives took to the rails in the United Kingdom in the 1820s, the technology soon traveled to the United States. The *Best Friend of Charleston,* the first American locomotive in revenue-generating service, launched in December 1830. [122,2,3]
2. E Though steam-powered railways had a slow start in the United States, by the 1850s their advantages over canals and natural waterways had won out. Railroads soon became a fixture of westward American migration (and the West in the popular consciousness). [122,2,3]
3. D The First Transcontinental Railroad was completed four years after the Civil War. The "golden spike" completion ceremony took place on May 10, 1869. [123,1,caption]
4. B The completion ceremony took place at Promontory Summit in the present-day state of Utah (then the Utah Territory). Hammering in the golden spike was Leland Stanford, co-founder of Stanford University. [123,1,caption]
5. E Robert Fogel's *Railroads and Economic Growth,* published the year after he received his PhD, established the field of cliometrics, or "econometric history / new economic history." His most famous work, *Time on the Cross,* argued that American slavery was not as exploitative as popularly believed. [123,1,1]
6. A Robert Fogel's work relied on the use of counterfactuals, or scenarios contrary to reality. They are similar to alternate histories, except used in the service of economic history rather than entertainment. [123,1,1]
7. B Robert Fogel's counterfactual analysis suggested a savings of only 2% of GNP through better transportation of agricultural goods. His analysis did not calculate social benefits from transportation of other goods or people. [123,2,1]
8. D Efficient transportation allowed for low costs to ship goods between places. This brought local markets closer to one another's availability and prices, a process called market integration. [123,2,2]
9. C Promontory, an area of high ground (elevation over 2,000 meters) in present-day Utah, was the site of the final race to complete the First Transcontinental Railroad. The two teams working to lay track at opposite sides had Promontory Summit as their finish line. [123,1,caption]
10. C The Erie Canal linked the Hudson River, which flows into the Atlantic Ocean at New York City, with Buffalo on the eastern shore of Lake Erie. Lake Erie then offered a water route to reach the major Ohio ports of Cleveland and Toledo. [123,2,2]
11. A Cheap high-speed passenger rail would allow easy movement of people between two cities. This would make commuting convenient and thus integrate the cities' markets for labor. [123,2,2]
12. D According to Walton and Rockoff (2014), in 1816-1820, wholesale wheat prices in Cincinnati were 45% of Philadelphia levels and 48% of New York levels – less than half in both cases. [124,1,table]
13. C Between 1816 and 1860, wholesale flour prices in Cincinnati went from 66% of New York prices to 95% of New York prices, the biggest rise. [124,1,table]
14. B Between 1816 and 1860, wholesale wheat prices in Cincinnati remained consistently lower than those in New York. They were closest for the period 1856-1860, when Cincinnati's prices were 70% of New York's prices. [124,1,table]
15. D The ceremonial completion of the First Transcontinental Railroad took place with the hammering in of a golden spike (basically a large nail for rails). The nearly 18-karat spike, swiftly replaced by a regular one, still exists in the Cantor Arts Center at Stanford University. [123,1,caption]

1. A Early American manufacturing focused largely on textile production. Its origins were literally domestic, as many women took up home-based textile production during the American Revolutionary War. [124,1,1; 124,2,caption]
2. E New England had the correct conditions for the rise of factories, with more people than could work the limited amount of productive agricultural land. Manufacturing was slower to grow in other regions that did not have these conditions. [124,1,2]
3. E In New England, the amount of good agricultural land was limited. Once all that land was being worked, any further agricultural labor would have much lower marginal product. [124,1,2]
4. A Thomas Jefferson's Trade Embargo of 1807 was meant to keep American ships safe during warfare between Britain and France. It had the unexpected benefit of encouraging domestic industry. [124,1,3; 124,2,0]
5. E The Trade Embargo of 1807 was a response to the Napoleonic Wars raging between Britain and France. The complex web of wars and consequences included Britain's Royal Navy impressing or conscripting sailors, a key American grievance. [124,1,3]
6. B The Treaty of Ghent's ratification in 1815 ended the War of 1812 and thus the inherent protection of early U.S. domestic industry. At this potential inflection point, industry thrived rather than withering. [124,2,0]
7. A Samuel Slater was a British-born man whose family indentured-apprenticed him to a cotton mill. In 1789, Slater left Britain with his knowledge of the mill's workings, earning the nickname "Father of the American Industrial Revolution" from Andrew Jackson ... and "Slater the Traitor" back home. [125,1,1]
8. C British law in the late 1700s prohibited exporting the machines used to make textiles, or their designs. Samuel Slater got around this by memorizing the designs and then "exporting" himself by immigrating to the United States. [125,1,1]
9. D Francis Lowell studied the workings of power looms while touring Britain. Though British authorities searched him and his family for evidence of industrial espionage, Lowell, like Samuel Slater, had simply memorized the necessary plans. [125,1,1]
10. B Francis Lowell set up his most important factory complex in Waltham, Massachusetts. The Boston Manufacturing Company, founded by Lowell, used waterpower from the Charles River. [125,1,1]
11. B The water frame, a spinning frame using water power, was a key innovation in the business of spinning thread. Willowing, scutching, carding, and slubbing are other parts of the process of turning cotton into cloth. [125,1,1]
12. D Before Francis Lowell's innovations at Waltham, spinning thread and weaving it into cloth were two separate stages of manufacturing handled by different firms. One firm doing both under the same factory roof is thus an example of vertical integration. [125,1,2]
13. A The so-called "Lowell girls," unmarried young women, were the most famous workers of the textile mills at Waltham and later Lowell. Their living and working conditions led to landmark organization and events in U.S. labor history. [125,1,2]
14. B The "Lowell girls," unmarried young women employed in the textile mills, lived under close supervision in group homes. Their long working hours left little time for a social life, with the aforementioned supervision further discouraging distractions. [125,1,2]
15. D Per *Historical Statistics of the United States,* in 1860, about 14% of the United States workforce was in manufacturing. The shift away from agriculture and toward industry only intensified through the rest of the 1800s and into the 1900s. [125,1,3]