Chief Reader Report on Student Responses:

2019 AP® Microeconomics Free-Response Questions

Set 1

- Number of Students Scored 91,551
- Number of Readers 101
- Score Distribution

Exam Score	N	%At
5	22,240	24.3
4	25,706	28.1
3	15,792	17.2
2	10,986	12.0
1	16,827	18.4

- Global Mean 3.28

The following comments on the 2019 free-response questions for AP® Microeconomics were written by the Chief Reader Aaron Lowen, Professor of Economics, Grand Valley State University and the Leaders James Leady, Peter Duffer, and Walentyna Szczepinska-Karcz. They give an overview of each free-response question and of how students performed on the question, including typical student errors. General comments regarding the skills and content that students frequently have the most problems with are included. Some suggestions for improving student preparation in these areas are also provided. Teachers are encouraged to attend a College Board workshop to learn strategies for improving student performance in specific areas.

Question #1	**Task:** Graph, explain, assert	**Topic:** Monopoly, Production Costs, and Firm's Short-Run Decisions
	Max. Points: 9	**Mean Score:** 4.79

What were the responses to this question expected to demonstrate?

The question assessed students' understanding of the market conditions for a monopoly, how a monopoly would operate under these conditions, how a change in market conditions would affect firm behavior, and market efficiency. Students were expected to draw and label a graph for a monopoly earning positive economic profit and to show how the firm would operate if it were to make zero economic profit. Students were expected to analyze a change in supply conditions to determine how the change would affect market efficiency and the monopoly's profit. Students were also expected to analyze how a change in demand conditions would impact firm decision-making and operations.

The question states that FillUp has a local monopoly on the sale of gasoline and earns positive economic profit. In part (a) students were asked to draw a correctly labeled graph for a monopoly. Part (a)(i) and (a)(ii) asked students to show the profit-maximizing quantity and price, respectively. These parts of the question test students' knowledge of market conditions for a monopoly and their ability to illustrate these concepts using a graph. This task includes demonstrating knowledge of revenue and cost conditions by drawing a downward- sloping demand (D) curve and a downward-sloping marginal revenue (MR) curve that lies below the demand curve. Students had to draw both the marginal cost (MC) curve and average total cost (ATC) curve. Students were asked to show that the profit-maximizing quantity occurs where MR equals MC and that the profit- maximizing price is determined by identifying the price that corresponds to this quantity on the D curve. These tasks required students to demonstrate marginal analysis in a graphical format. Students also had to apply the positive economic profit condition by placing the ATC curve below the D curve at the profit-maximizing quantity. Part (a)(iii) asked students to shade in the area representing the deadweight loss associated with the monopoly's profit-maximizing quantity. In this task students graphically illustrate the inefficiency caused by monopoly power. Part (a)(iv) asked students to consider an alternative outcome where the firm would earn zero economic profit. Students had to demonstrate understanding of this condition by identifying the quantity where the D curve intersected the ATC curve. While not stated explicitly in the question prompt, this last task relates to one possible type of government intervention into a monopoly market.

Part (b) of this question introduced a supply-side change and asked students to analyze how this change would impact firm behavior and market efficiency. Specifically this part of the question told students to assume that FillUp's fixed costs increased because of a new lease on its property and the firm stayed in business. This part required students to demonstrate knowledge of production cost relationships and recognize that a change in fixed costs would have no impact on marginal costs. Students had to apply this lack of effect on marginal costs to conclude that the firm would not alter its profit-maximizing quantity. Part (b)(i) asked students to identify the effect of this change on deadweight loss. Students needed to state that deadweight loss would remain unchanged and explain that a change in fixed costs does not affect the firm's marginal costs and profit-maximizing quantity. In part (b)(ii) students had to assert that the monopoly's economic profit would decrease as a result of the increase in fixed costs.

Part (c) of this question introduced a demand-side change and asked students to analyze how this change would impact firm behavior. This part told students to assume that the demand for gasoline decreased because people bike to work more often. In part (c)(i) students needed to state that for the firm to continue to operate in the short run its price must be greater than its average variable cost (or equivalent variations such as total revenue greater than total variable costs). Part (c)(ii) asked students to determine the firm's short-run response to the decrease in demand. Students needed to apply the demand shift and conclude that the profit-maximizing quantity and price would both decrease.

How well did the response address the course content related to this question? How well did the responses integrate the skills required on this question?

In part (a) students drew downward-sloping demand and marginal revenue curves with the MR curve below the D curve correctly on 70.5% of responses. Students earned the point for identifying the profit-maximizing quantity where MR equals MC on 70.1% of responses. The associated profit-maximizing price above the ATC curve was earned on 57.5% of the responses. Students earned the point for correctly shading the deadweight loss 58.7% of the time. The most challenging point in part (a) was the one earned for correctly identifying the zero economic profit quantity; 38.5% of students earned this point.

For the two points possible in part (b), students sufficiently explained why deadweight loss would remain unchanged in part (b)(i) on 33.2% of responses, and they asserted that economic profit would decrease in part (b)(ii) on 81.2% of responses.

In part (c)(i) students correctly expressed the condition to not shut down in the short run on 33.9% of responses. In part (c)(ii), 49.5% of student responses correctly asserted that the firm would decrease both its profit-maximizing quantity and price in response to the decrease in demand for its product.

What common student misconceptions or gaps in knowledge were seen in the responses to this question?

Common Misconceptions/Knowledge Gaps	*Responses that Demonstrate Understanding*
Part (a) • Drawing a horizontal demand curve, confusing perfect competition with monopoly. • Identifying the MR curve as the same as the D curve. • Identifying the profit-maximizing quantity (Q_F) at the intersection of the D and MC curves. • Identifying the profit-maximizing price (P_F) directly across from the intersection of the MR and MC curves. • Omitting the ATC curve. • Shading the consumer surplus or firm's profit instead of the deadweight loss. • Identifying the quantity at which the firm earns zero economic profit (Q_Z) at the minimum of the ATC curve or at the intersection of the D and MC curves.	• Drawing a downward-sloping demand curve that encapsulates market power. • Drawing the downward-sloping MR curve twice as steep as the D curve and below it. • Placing Q_F along the quantity axis where a dashed line extends down from the intersection of the MR and MC curves. • Placing P_F along the price axis where a dashed line extending up from Q_F to the D curve then extends left to the price axis. • Drawing an ATC curve such that at Q_F the ATC curve is below P_F. • Shading the deadweight loss as the area bounded by the D curve, the MC curve, and Q_F. • Placing Q_Z along the quantity axis where a dashed line extends down from the intersection of the D and ATC curves.

• Placing Q_F, P_F, or Q_Z at an intersection in the interior of the graph.	• Placing specific quantities and prices along the appropriate axis with a dashed line extending from the relevant curve intersection to the axis.
Part (b)(i) • Asserting the deadweight loss (DWL) would increase or decrease. Explanations often referenced a change in the firm's profit-maximizing quantity or price. • Providing an insufficient explanation for why DWL would remain unchanged by simply repeating the information given that fixed costs increase without connecting that change to the firm's marginal decision.	 • Asserting that deadweight loss would remain unchanged and explaining that this is because the change in fixed costs would not affect the firm's marginal cost or profit-maximizing quantity. • Explaining that DWL would remain unchanged because the change in fixed costs would not affect the firm's marginal cost or profit-maximizing quantity.
Part (b)(ii) • Asserting that FillUp's economic profit will increase or stay the same	 • Asserting that FillUp's economic profit will decrease
Part (c)(i) • Stating that to continue to operate in the short run, P > AVC, MR > AVC, or most commonly, total revenue > total fixed costs. • Stating that to continue to operate in the short run, the firm must "cover" variable costs. • Comparing things measured in different units, for example, total revenue (measured in dollars) to AVC (measured in dollars/unit).	 • Identifying that for the firm to continue to operate in the short run, P > AVC or total revenue > total variable costs. • Including a comparison of relevant economic terms, P to AVC or TR to TVC. • Comparing items measured in the same units, such as total revenue to total variable cost (both measured in dollars) or price to average variable cost (both measured in dollars/unit).
Part (c)(ii) • Identifying the profit-maximizing quantity as decreasing but the price as increasing. Students may have correctly determined that Q fell and then used the original D curve to conclude that P would increase.	 • Understanding that both the D curve and the MR curve shift left. The leftward shift of MR decreases the profit-maximizing Q. The leftward shift of the D curve causes the new profit-maximizing P to decrease at the new Q.

Based on your experience at the AP® Reading with student responses, what advice would you offer teachers to help them improve the student performance on the exam?

The monopoly model and its accompanying graph is perhaps the most important market structure model for students to understand since nearly all firms have some degree of market power. Students were relatively successful at constructing the basic model, correctly drawing the demand, marginal revenue, and marginal cost curves, and then using these curves

to identify the profit-maximizing quantity and price. Students generally understood the basic mechanics of the quantity and price determination for a firm with market power.

Students were less successful incorporating additional conditions into the model. Many of the students who demonstrated that they understood the monopoly price determination process failed to also incorporate the condition that the firm was earning positive economic profits. Most commonly, this error was made by omitting the average total cost curve, which is necessary to demonstrate positive profits. Similarly, students seemed to struggle to illustrate the quantity at which the monopoly would earn zero economic profits.

A teaching recommendation is to encourage students to consider all information that is provided in the stem of the problem and ask themselves if and how each piece of information is relevant. Had students been tasked to shade in the positive economic profit, they may have been more likely to draw the ATC curve and place it appropriately. Without this cue, it seems many students overlooked the information about profitability.

Students scored relatively low in part (c)(i) where they had to demonstrate understanding of the firm's shutdown decision. This topic (as well as zero economic profit) is often introduced during coverage of perfect competition. Teachers should revisit economic concepts from earlier topics and ask students to consider how they apply to subsequent topics. This will help students become more adept with the newer topics and gain more comprehensive understanding of economic concepts.

A final suggestion is to encourage students to employ graphical models to understand the effects of changes in an economic environment, even in cases where the use of a graphical model is not required. Parts (b) and (c) introduced changes in the economic environment, but neither part required students to illustrate the changes on their graph. Many students therefore did not appear to use the graphical model to help understand the effects of these changes. This was evident by a lack of changes sketched on their graphs and by an absence of additional graphs to help them work through the increase in fixed costs in part (b) and the increase in demand in part (c). Some students appear to employ a graph only when it is explicitly required, and these students are missing out on the advantages a graph can provide as an analytical tool.

What resources would you recommend to teachers to better prepare their students for the content and skill(s) required on this question?

Teachers may log in to AP Classroom to access formative questions and past AP questions on the content and skills addressed in this question.

Question #2	**Task:** Perform numerical analysis, explain	**Topic:** Marginal Analysis and Consumer Choice, and Elasticity
	Max. Points: 5	**Mean Score:** 1.98

What were the responses to this question expected to demonstrate?

This question assessed students' ability to identify and analyze the optimal consumption bundle from a table with the marginal benefit of both products provided to the student. The concepts in the question included marginal analysis, calculating consumer surplus, maximizing marginal benefit, and an analysis of two goods to compare the marginal benefit of the last dollar spent based on a budget constraint.

The question included two tables containing data on the marginal benefit of water and the marginal benefit of good X. In part (a) students were asked to calculate the total benefit from purchasing two bottles of water and 1 unit of good X. Students were directed to show their work, were expected to set up the equation correctly (= $24 + $18 + $24 or = $42 + $24), and to calculate the total benefit of $66.

In part (b) students were expected to calculate the total consumer surplus if 3 units of good X were purchased. Students were directed to show their work, were expected to set up the equation correctly (=($24-$5)+($18-$5)+($12-$5) or =$54-$15), and to calculate the total consumer surplus as $39.

Part (c) had three parts based on the assumption that the price of water was $3, the price of good X was $6, and the budget constraint was $30.

In part (c)(i) students were expected to explain why the consumer did not maximize her benefit with the purchase of 2 bottles of water and 4 units of good X. Students were directed to use marginal analysis to explain the answer. In the answer students had to explain that the marginal benefit per dollar of water was greater than the marginal benefit per dollar of good X (18/$3 > 6/$6 or 6 > 1).

Part (c)(ii) required students to assert the optimal quantities of good X and water at the prices of $6 and $3 respectively. The correct answer was 3 bottles of water and 4 units of good X. Students were not expected to explain or show work for this point.

Part (c)(iii) required students to calculate Dana's cross-price elasticity after the price of good X decreased from $6 to $3 and to show their work. Additionally, students were required to state whether the goods were complements or substitutes. Based on the number of water bottles chosen in (c)(ii) and the price change from $6 to $3, students were expected to set up the equation correctly (=25%/-50%) and to calculate the cross-price elasticity as -0.5. Students could have calculated the cross-price elasticity as -.33 by using an alternative formula for calculating the cross-price elasticity—the mid-point formula. Students also had to assert that the two goods are complements.

How well did the responses address the course content related to this question? How well did the responses integrate the skills required on this question?

In part (a), 67.9% of students properly calculated the total benefit of $66 and showed their work. Some students did not show their work but asserted $66 and did not receive credit. Others did not know how to calculate total benefit from marginal benefit.

In part (b), 49.2% of students properly calculated the consumer surplus of $39 and showed their work. Many students who did not receive credit did not show their work and/or did not know how to calculate consumer surplus from the table.

In part (c)(i), 25.9% of students properly explained that the marginal benefit per dollar spent on bottles of water (18/$3=$6) was greater than the marginal benefit per dollar spent on good X (6/$6=$1). Many students who did not receive the point did not use marginal analysis per dollar spent in their response or did not have a per dollar spent comparison.

In part (c)(ii), 69.5% of students properly identified 3 units of good X and 4 bottles of water. The answer the students provided for this part of the question was then used in part (c)(iii).

In part (c)(iii), 16.6% of students properly calculated the cross-price elasticity as -0.5, showed their work, and stated that the two goods are complements. Many students who did not receive this point did not correctly apply the cross-price elasticity formula, either by flipping P and Q or not using percentage changes.

What common student misconceptions or gaps in knowledge were seen in the responses to this question?

Common Misconceptions/Knowledge Gaps	*Responses that Demonstrate Understanding*
Part (a) • Calculating the total benefit of purchasing only one of the two products instead of both. • Multiplying $18 * 2 to calculate the total benefit from purchasing 2 bottles of water instead of adding the marginal benefit of 1 bottle of water and the marginal benefit of 2 bottles of water. • Adding only the marginal benefit of the second bottle of water instead of the marginal benefit of both the first and the second bottles of water.	• ($24 + $18) + $24 = $66 • $42 + $24 = $66
Part (b) • Multiplying the quantity of 3 * $5 and then subtracting by $12 (which is the marginal benefit at 3). • Calculating the total cost rather than the total consumer surplus. • Attempting to calculate the area of a triangle of consumer surplus from a demand curve inferred from the table.	• ($24-$5) + ($18-$5) + ($12-$5) = $39 • $54 - $15 = $39

Part (c)(i) • Incomplete explanation of why the consumer does not maximize her benefit when she purchases 2 bottles of water and 4 units of good X. • Comparing the marginal benefit of water and Good X without accounting for the price of each good. • Calculating the optimal consumption bundle. • Calculating the optimal consumption bundle and explaining why that's the optimal consumption bundle.	• Dana does not maximize her benefit because the marginal benefit per dollar spent on bottles of water is greater than the marginal benefit per dollar spent on good X (or in symbols $MB_w/P_w > MB_x/P_x$). • Dana does not maximize her benefit because 18/\$3 > 6/\$6. • Dana does not maximize her benefit because 6>1 (or because 6≠1).
Part (c)(ii) • Not applying the consumer constraint of \$30 to the question. • Applying the price(s) to the quantities.	• 3 bottles of water and 4 units of good X
Part (c)(iii) • Not knowing the formula for cross-price elasticity. • Not using percentage changes in the formula. • Reversing the price and quantity in the formula.	• 25% / -50% = -0.5; the goods are complements • (1/4.5)/(-3/4.5)=-0.33; the goods are complements

Based on your experience at the AP® Reading with student responses, what advice would you offer teachers to help them improve the student performance on the exam?

When teaching marginal analysis and consumer choice, it's important to emphasize the distinction between total benefit and marginal benefit. In part (a) students were asked to figure out the total benefit from purchasing 2 bottles of water and 1 unit of good X using a table that listed marginal benefit. Some students mistakenly multiplied the price by the marginal benefit while other students added only the marginal benefit of the second bottle of water instead of adding the marginal benefit of both the first and the second bottles. It might be helpful in problems like this in which the table has a marginal benefit column to have students create their own total benefit column.

In part (b) students were required to calculate the total consumer surplus from the data in the table. Many students mistakenly tried to answer this question by calculating the area of a triangle because they are typically taught how to calculate consumer surplus from a graph. It may be helpful to teach students how to calculate consumer surplus from

both a graph and a table. Teachers can use this problem to show that the total consumer surplus of purchasing three units of Good X can be calculated from the table by subtracting the price from the marginal benefit at each quantity: ($24-$5) + ($18-$5) + ($12-$5) = $39. Almost all of the correct responses used this method. Another way to find the solution is to subtract the total price of purchasing three units of Good X from the total benefit: ($24 + $18 + $12) – (3*$5) = $54 – $15 = $39. Teaching students how to calculate consumer surplus from both a graph and a table may also help reinforce students' conceptual understanding of what consumer surplus is.

Analyzing the optimal consumption bundle with a given set of conditions is an important application of the theory of consumer choice. Teachers should provide opportunities for students to practice applying their conceptual understanding of the optimal consumption bundle (i.e., $MB_x / P_X = MB_y / P_y$) with numerical problems such as these. Many of the incorrect answers for this question were missing the denominator of price and were thus comparing the marginal benefit of the two goods without accounting for the price of each good.

Finally, the lowest-performing portion of this question was the last part, which required students to calculate the consumer's cross-price elasticity of demand and to determine whether the two goods are substitutes or complements based on the sign of that calculation. Many students who missed this question did so because they didn't know the correct formula for cross-price elasticity. It may be helpful for teachers to provide students with opportunities for guided practice calculating measures of elasticity and to use that opportunity to correct common mistakes, such as forgetting to use percentage changes or reversing the numerator and denominator. Students also need to understand the significance of the sign when calculating cross-price elasticity. Teachers may want to start a lesson on the topic by using practice problems that involve goods that students know as substitutes and complements but to then use anonymous goods (e.g., Good X and Good Y) later in the lesson to challenge students to remove their knowledge of the product relationship and instead use the equation to determine how they are related.

What resources would you recommend to teachers to better prepare their students for the content and skill(s) required on this question?

Teachers may log in to AP Classroom to access formative questions and past AP questions on the content and skills addressed in this question.

Question #3	**Task:** Perform numerical analysis, explain, create a visual representation	**Topic:** Oligopoly and Game Theory
	Max. Points: 6	**Mean Score:** 3.02

What were the responses to this question expected to demonstrate?

This question assessed students' ability to apply game theory to analyze the behavior of two players (firms: Patrick's Pie and Dee's Pizzeria) using a payoff matrix. The concepts in the question included interpretation of the payoff matrix, identifying the actions that maximize the combined payoffs, understanding and identifying the dominant strategy, and identifying the Nash equilibrium. Students also needed to demonstrate the ability to redraw a payoff matrix when the market conditions change.

In part (a) students were expected to use the payoff matrix to determine which of the actions maximize players' combined total profits by adding the individual profits. Patrick's Pie choosing "Advertise" and Dee's Pizzeria choosing to "Stay Out" maximize the total profits.

Using the information in the matrix, in part (b) students were expected to recognize that neither player has an incentive to cheat and explain, using numbers, that if Dee's Pizzeria cheated, its profits would decrease from $0 to -$2, and if Patrick's Pie cheated, its profits would decrease from $175 to $100.

Part (c) required students to demonstrate their understanding of a dominant strategy by stating that Patrick's Pie does not have a dominant strategy.

In part (d) students were expected to recognize that this game has two Nash equilibria and identify them as follows: Patrick's Pie "Do Not Advertise" and Dee's Pizzeria "Enter"; Patrick's Pie "Advertise" and Dee's Pizzeria "Stay Out."

In part (e)(i) students had to demonstrate how a change in market conditions (Patrick's Pie pays Dee's Pizzeria $20 if Dee chooses to "Stay Out") affects the payoff matrix. Students needed to redraw the payoff matrix with lower profits for Patrick's Pie ($175-$20=$155; $100-$20=$80), and higher profits for Dee's Pizzeria ($0+$20=$20; $0+$20=$20) given Dee's Pizzeria's choice to "Stay Out." In part (e)(ii) students needed to identify the new Nash equilibrium: Patrick's Pie chooses"Advertise" and Dee's Pizzeria chooses to "Stay Out."

How well did the responses address the course content related to this question? How well did the responses integrate the skills required on this question?

In part (a) more than half of students (58.1%) identified the actions that maximize the combined profits for both players as "Advertise" for Patrick's Pie and "Stay Out" for Dee's Pizzeria.

In part (b) only 20.8% of students correctly stated that no player had an incentive to cheat, and used correct numbers from the payoff matrix to explain that if Dee cheated his profit would decrease from $0 to -$2, and that if Patrick cheated his profits would decrease from $175 to $100.

In part (c), 71.1% of students correctly stated that Patrick's Pie does not have a dominant strategy.

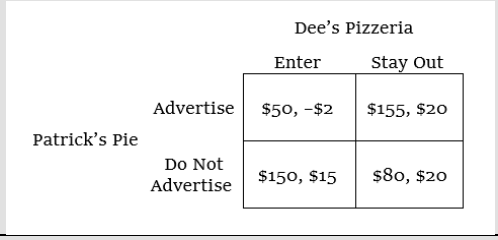
In part (d) only 24.1% of students identified that there are **two** Nash equilibria in the payoff matrix given in the question: Patrick's Pie "Do Not Advertise" and Dee's Pizzeria "Enter"; and Patrick's Pie "Advertise" and Dee's Pizzeria "Stay Out."

In part (e)(i), 51.3% of students successfully redrew the matrix, including players, actions and payoffs, after the change in market conditions.

In part (e)(ii), 76.6% of students correctly stated that the Nash equilibrium for the redrawn matrix is for Patrick's Pie to "Advertise" and for Dee's Pizzeria to "Stay Out."

What common student misconceptions or gaps in knowledge were seen in the responses to this question?

Common Misconceptions/Knowledge Gaps	*Responses that Demonstrate Understanding*
Part (a) • Unable to determine the actions that maximize the combined profits for both players. • Confusing the actions of the players with their payoffs (e.g., "$175, $0").	• Stating that the actions that maximize the combined total profits are for Patrick's Pie to "Advertise" and Dee's Pizzeria to "Stay Out." Students determine this by summing both players' profits (i.e., $175 + $0 = $175, which is the maximum combined profits).
Part (b) • Unable to recognize the best option (payoff) for each player and whether players have unilateral incentives to cheat. • Explaining that neither firm has an incentive to cheat without using numbers from the payoff matrix.	• Stating that neither firm has a unilateral incentive to cheat and explaining using numbers from the matrix for each pizzeria: if Dee cheated, his profits would decrease from $0 to -$2, and if Patrick cheated, his profits would decrease from $175 to $100.
Part (c) • Unable to determine whether the players have a dominant strategy using the payoff matrix.	• Stating that Patrick's Pie does not have a dominant strategy.
Part (d) • Recognizing only one Nash equilibrium instead of two in the given payoff matrix. • Not understanding how to find Nash equilibrium when neither player has a dominant strategy. Part (e)(i)	• Identifying the **two** Nash equilibria: (1.) Patrick's Pie "Do Not Advertise" and Dee's Pizzeria "Enter" (2.) Patrick's Pie "Advertise" and Dee's Pizzeria "Stay Out"

• Unable to correctly redraw a new matrix after market conditions changed.	• Correctly redrawing the payoff matrix with the players, actions, and payoffs that shows how Patrick's Pie's payment to Dee's Pizzeria would affect the payoffs: 
Part (e)(ii) • Unable to correctly recognize the Nash equilibrium for the redrawn matrix.	• Identifying the Nash equilibrium as Patrick's Pie to "Advertise" and Dee's Pizzeria to "Stay Out."

Based on your experience at the AP® Reading with student responses, what advice would you offer teachers to help them improve the student performance on the exam?

To master the concept of game theory, students need to learn how to correctly read a payoff matrix and determine the players, actions, and payoffs; many students confused the actions with the payoffs (outcomes). Understanding how to read and use payoffs and choices from a game matrix should be practiced in class; having students take the roles of decision-makers and practice explaining their decisions may be a helpful exercise. This familiarity with the payoff matrix is important to determine if a dominant strategy exists for any of the players, and if so, which is dominant. This will also help students detect the Nash equilibrium or equilibria. Teachers should require students to use payoffs from the matrix when justifying their answers.

Teachers are encouraged to teach students how to correctly modify a payoff matrix to show the effect of a change, such as the effect of a side payment. Also, it is important to emphasize that the existence of a dominant strategy is not necessary for a Nash equilibrium, and that a payoff matrix can have more than one Nash equilibrium.

What resources would you recommend to teachers to better prepare their students for the content and skill(s) required on this question?

Teachers may log in to AP Classroom to access formative questions and past AP questions on the content and skills addressed in this question. There is also a lesson titled "Teaching About Game Theory" in the *Mastering Economic Thinking Skills* module that's available in the Classroom Resources section of the AP Microeconomics course page.