PBA Scoring Guide: Module 1 Moving up Moving Out

The chart below offers guidance for scoring the PBA. If there is a right answer, it is provided below. Additionally, if there are answers that rely upon interpretation with student justification, that guidance is also provided. It is essential that a tutor/evaluator carefully evaluate all student responses to ensure accurate/reasonable answers. Responses should demonstrate satisfactory performance of the related Eligible Content.

<table>
<tr><th>Evaluative Factor/Criteria for Presentation</th><th>Scoring Guidance</th></tr>
<tr><td colspan="2">TASK 1: Task 1: Finding Your First Apartment!</td></tr>
<tr><td>Activity 1: What are the variables?</td><td></td></tr>
<tr><td>1. When deciding on an apartment, there are two variables to consider. If one variable represents time (in months), the other variable represents:</td><td>y = cost based on the # of months the Apt. was rented

m = rental cost per month</td></tr>
<tr><td>2. In identifying the variables, let x = time (in months), then y =</td><td>x = # of months
y = security deposit</td></tr>
<tr><td>Activity 2: What's it going to cost?</td><td></td></tr>
<tr><td>1. You decide to create a table to compare the cost of each apartment (including security deposit) for 6, 12, 18, and 24 months. Complete the table below:</td><td>
<table>
<tr><th>Apartment</th><th>6 Months</th><th>12 Months</th><th>18 Months</th><th>24 Months</th></tr>
<tr><td>Mango Street</td><td>$7, 700</td><td>$13,000</td><td>$18,500</td><td>$23,900</td></tr>
<tr><td>Peach Street</td><td>$6,600</td><td>$12,500</td><td>$18,500</td><td>$24,500</td></tr>
</table>
</td></tr>
<tr><td>Activity 3: Identify the system!</td><td></td></tr>
</table>

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1. To better understand the cost of each apartment, you must write an equation in slope intercept form that represents the total cost of each in terms of x and y.	Mango Street: y = 900x + 2300 Peach Street: y = 100x + 500
Activity 4: How do they compare?	
1. Graph the system of equations from Activity 3 on a coordinate plane and label each line.	Answers will vary based on scale.

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	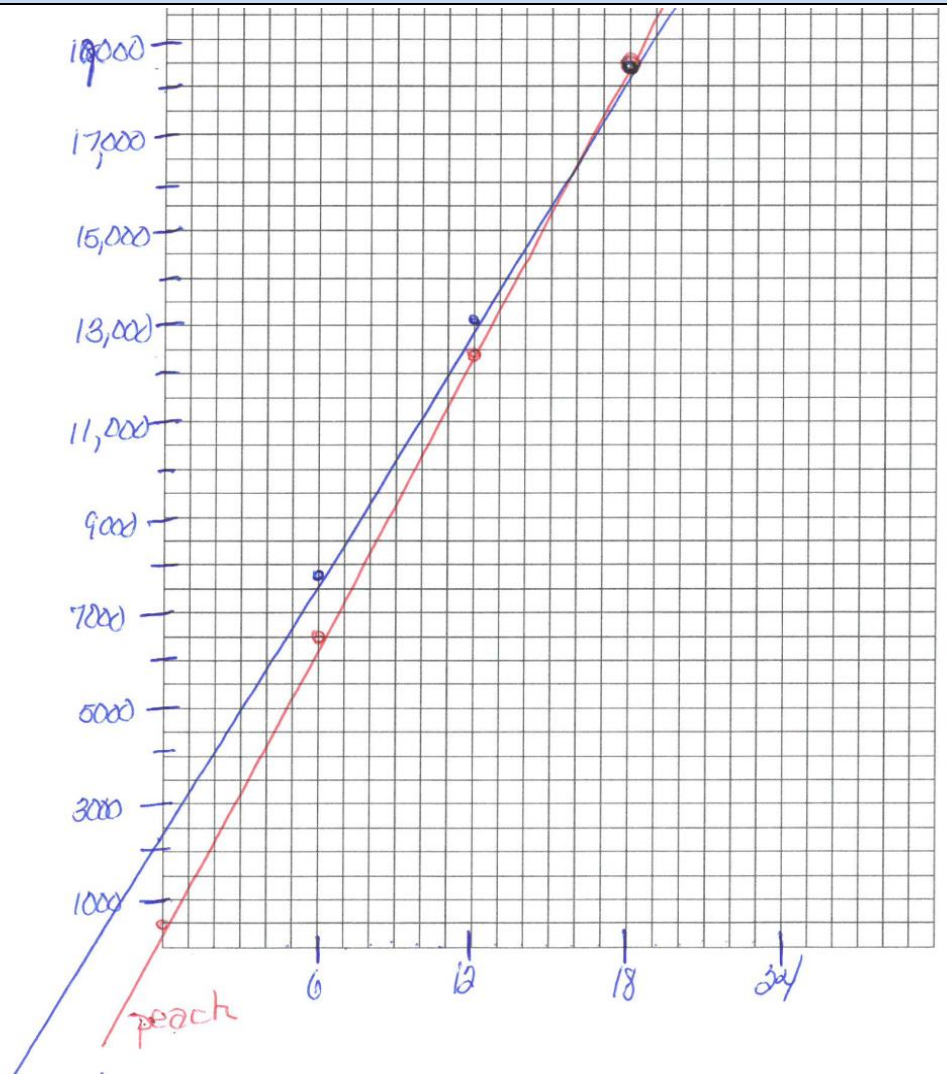
2. What is the point of intersection? Write as an ordered pair.	(18, $18,500)

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3. You are not sure if you found the point of intersection correctly so you decide to verify that your answer is correct by solving a system of equations from Activity 3 using the elimination or substitution method.	900 x + 2300 = 1000x + 500 1800 = 100x 18 = x y = 900(18) + 2300 y = 18,500
4. What does the point of intersection represent when considering the cost of each apartment?	Regardless of which apartment you rent, you will spend $18,500 by the time you have rented the apartment for 18 months.
Activity 5: Which place will you choose?	
1. What is the total cost of each apartment at the end of three months?	Blueberry Street: y = 3900 Mango Street: y = 5000 Peach Street: y = 3500
2. When (in months) will the cost of Blueberry and Peach Street apartments be the same?	800x + 1500 = 1000x + 500 1000 = 200x 5 = x
3. Which apartment do you want to rent?	If you rent for 0-5 months, Peach Street is the most cost effective; if you rent for more than 5 months, Blueberry Street is the most cost effective.
Task 2: How much money do you need?	
Activity 1: Keep it linear!	
1. In order to determine if you will earn enough money, write an inequality to show how many	8.25 ≥ 100 + 225

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hours (x) you have to work per month to pay the rent and utilities.	
1. What is the minimum number of hours you have to work per month to pay these bills?	149 hours
Activity 2: Create a system!	
1. Using the information above, write an inequality for total hours worked in a month. Using the information above, write an inequality for total amount earned in a month.	$X + y \leq 172$ $1475 \leq 8.25 x + 9y$
Activity 3: Graph it!	

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1. Graph the system of inequalities from Activity 2 on a coordinate plane and label each line.	 Answers will vary based on scale used.
2. Estimate the ordered pair where the lines intersect and explain what this intersection represents in the space below.	Answers will vary depending on graph, near (97,75). 98 hours a month at $8.25 74 hours at $9.00
3. What is a possible solution for this system of inequalities and what does this ordered pair represent? Place your answer in the space below.	Anything that is within the region.

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4. How many yours would you work at each job per week? Justify your answer in the space below.	1475/9 = 163.88 hours a month 163.88/4.3 = 38.11 hours a month, 39 hours a week at $9 per hour.
Task 3: How big is my new place?	
Activity 1: How much space in your place?	
1. Factor the trinomial to find the length and width of the room represented as binomial expressions.	a = x + 6
2. Now that you have calculated the length of the bedroom/living room wall and the length of the living room/dining room (represented by the polynomial 2x3 – 11x2 – 16), find the area of this space and simplify your answer.	$(2x^3 – 11x^2 – 16) (x + 6)$ $2x^4 + x^3 – 66x^2 – 16x - 96$
3. Using the dimensions that were given and the dimensions you calculated, find the perimeter of the entire apartment as a simplified polynomial.	$4x^3 – 22x^2 + 10x - 28$
Activity 2: Time to remodel!	
1. If x = 6, what is the square footage of the living room?	240 square feet

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<tr><td>2. Carpeting is typically sold in square yards. Approximately how many square yards of carpet do you need to buy to replace the flooring in your new living room?</td><td>27 square yards</td></tr>
<tr><td>Activity 3: Let's paint!</td><td></td></tr>
<tr><td>1. If x = 6 ft. and the height of the walls is 9ft., what is the surface area of the four walls?</td><td>432 square feet</td></tr>
<tr><td>2. But wait! You do not need to paint the door, the closet, and the window. What is the recalculated area using the information provided below?</td><td>363 square feet</td></tr>
<tr><td>Task 4: You Have a Place, Now it's Time to Save?</td><td></td></tr>
<tr><td>Activity 1: Time to start saving!</td><td></td></tr>
<tr><td>1. Use the graph above to complete the table below.</td><td><table><tr><th>X (in months)</th><th>Y (in dollars)</th></tr><tr><td>5</td><td>800</td></tr><tr><td>7</td><td>1000</td></tr><tr><td>11</td><td>1400</td></tr></table></td></tr>
<tr><td>2. Identify the slope of the line and state what it represents in the space below.</td><td>m = 100</td></tr>
</table>

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3. Identify the y-intercept of the line and state what it represents in the space below.	b = 300
4. Use the graph and/or the table above to table above to write the linear equation that represents the savings plan in the space below.	y = 100x + 300
5. Calculate how much money you save after two years if you do not withdraw any money and continue to make the same monthly deposit in the space below.	2700
6. How many months would it take to save $3,000? Show your work in the space provided or use paper and pencil and upload your work below.	x = 27
Activity 2: More for your Money!	
Method 1: Identify which part of your linear equation will change. Calculate a new linear equation based on the same initial deposit and changing your monthly deposit to result in a savings of $2,400 after twelve months.	Slope and 175

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Method 2: Identify which part of your linear equation will change. Calculate a new linear equation based on the same initial deposit and changing your monthly deposit to result in a savings of $2,400 after twelve months.	y-intercept and 1200
Task 5: To Roommate or not to Roommate?	
1. How does it change the equation of the total rent?	**$**1475 –$ 600 = $875
2. Your roommate will also be using utilities. How does this change the total cost of utilities? What about your portion of the utilities?	The overall cost of some utilities may go up, but your portion will go down since you are only paying half.
3. The amount of money you have to pay out will decrease with a roommate. How will this change the amount of hours you need to work each week at each job? Will you still need a second job?	You will only need the $9 an hour job but if you can work the $9 an hour job for 39 hours, you could pay the rent on your own.
3. Do you think getting a roommate will save you money over time?	Yes, if you continue to work as much as possible and save money,