**Grade 8 Justin Joins a Gym – Anchor Annotations**

**A1 Score 4**

Part A: The student correctly identified the slope (*Slope is 10*) and explained what the slope represents (*monthly rate Justin has to pay*). The student correctly identified the *y*-intercept (*y-intercept is 5*) and explained what the *y*-intercept represents (*discounted fee to join*). [2 points]

Part B: The student provided the correct answer (*Justin saves $20 the first month*). Although it is not necessary for credit, the work shown is correct. The student shows how each first month’s cost is calculated by starting with the

equation for the regular price (*y = 15x + 20*), substituting 1 for *x*, and then solving the equation to get *y* = 35. The student then took the discounted price equation (*y = 10x + 5*), substituted 1 for *x*, and then solved the equation to get *y* = 15. By finding the difference between the two *y* values (*35 – 15*), the student determined that Justin saves $20. [1 point]

Part C: The student provided a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*In a real life situation, you can not go a negative amount of months or pay a negative amount of money.*) The student correctly identified that negative numbers in this context are not realistic. [1 point]

**A2 Score 4**

Part A: The student correctly identified the slope (*slope is 10*) and explained what the slope represents (*monthly rate*). The student also correctly identified the *y*-intercept (*y-intersept is 5*) and explained what the *y*-intercept represents (*the joining fee, which you pay up front*). [2 points]

Part B: The student provided the correct answer (*He saves 20 dollars*). While support is not required for Part B, the student likely calculated the regular price and the discounted price for the first month by substituting 1 in for *x* into both equations, solving each equation for *y*, and then subtracting the two values. [1 point]

Part C: The student provided a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*you cannot have negative months.*) The student correctly interpreted that a negative number in this context is not realistic. [1 point]

**A3 Score 3**

Part A: The student incorrectly identified the slope (*10x*), but correctly explained what the slope represents (*monthly rate*). The student correctly identified the *y*-intercept (*y-intercept is 5*) and what the *y*-intercept represents (*fee to join*). [1.5 points]

Part B: The student provided the correct answer (*Justin save $20 the first month*). Although it is not necessary for credit, the work shown is correct. The student showed how each first month’s cost is calculated by starting with the

equation for the regular price (*y = 15x + 20*), substituting 1 for *x*, and then solving the equation to get *y* = 35. The student then took the discounted price equation (*y = 10x + 5*), substituted 1 for *x*, and then solved the equation to get *y* = 15. By finding the difference between the two *y* values (*35 – 15*), the student determined that Justin saves $20. [1 point]

Part C: The student provided a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*you can’t have negative money or negative time*). The student correctly identified that negative numbers in this context are not realistic. [1 point]

**A4 Score 3**

Part A: The student correctly identified the slope (*The slope of the equation is 10*) and explained what the slope represents (*how much money the membership costs each month*). The student also correctly identified the *y*-intercept (*y-intercept is 5*) and explained what the *y*-intercept represents (*initial fee*). [2 points]

Part B: The student provided an incorrect answer (*Justin saves $15 in the first month*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

Part C: The student provided a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*it is not possible to join the gym for -3 months or pay a total of -25 dollars*). The student correctly identified that negative numbers in this context are not realistic. [1 point]

**A5 Score 2**

Part A: The student correctly identified the slope (*slope – 10*) and the *y*-intercept (*y intercept – 5*). The student’s explanation of what the slope and *y*-intercept represent is incorrect (*The slope and y-intercept represent the monthly rate*) and earns no credit. [1 point]

Part B: The student provided the correct answer (*He saves $20*). While support is not required for Part B, the student likely calculated the regular price and the discounted price for the first month by substituting 1 in for *x* into both equations, solving each equation for *y*, and then subtracting the two values. [1 point]

Part C: The student provided an incomplete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*because the numbers are negative*). The student’s explanation is incomplete because they did not associate the negative numbers with either time or money. [0.5 points]

**A6 Score 2**

Part A: The student incorrectly identified *10* as the *y*-intercept and *5* as the slope. The student correctly explained what *10* and *5* in the given equation represent: (10 ─ *monthly fee*) and (5 ─ *initial starting price*), respectively. Note that the student correctly linked 10 to the monthly fee and 5 to the initial starting price, with the incorrect labels of *y-int* and ­*slope*. [1 point]

Part B: The student provided the correct answer (*Justin saves $20 starting the first month*). While support is not required for Part B, the student likely calculated the regular price and the discounted price for the first month by substituting 1 in for *x* into both equations, solving each equation for *y*, and then subtracting the two values. [1 point]

Part C: The student provided an incomplete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*because you can’t have negative numbers*). The student’s explanation is incomplete because they did not associate the *negative numbers* with either time or money. [0.5 points]

**A7 Score 2**

Part A: The student correctly identified the slope (*slope is 10*) and explained what the slope represents (*monthly rate*). The student also correctly identified the *y*-intercept (*y-intercept is* 5) and explained what the *y*-intercept represents (*initial fee*). [2 points]

Part B: The student provided an incorrect answer (*he pays $35*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

Part C: The student provided an incorrect explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*because its a negative equation*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**A8 Score 1**

Part A: The student correctly identified the slope (*The slope of this particular equation is 10*) and what the slope represents (*Justin is paying 10 dollars a month*). The student also correctly identified the *y*-intercept (*y-intercept is shown by the number 5*). The student’s explanation of what the y-intercept represents is incorrect (*being charged 5 bucks extra for the monthly rate*). [1.5 points]

Part B: The student provided an incorrect answer (*Justin saves 15 dollars*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

Part C: The student provided an incorrect explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*Justin cant be in debt as soon as he signs up*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**A9 Score 1**

Part A: The student has confused the slope and the ­*y*-intercept. The student incorrectly identified the slope (*5 is the slope*) and the *y*-intercept (*10 is the* *y-intercept*) and what both represent (*$10 for the initial fee*, *$5 per month*). The monthly charge is $10 and the initial fee is $5. [0 points]

Part B: The student provided the correct answer (*He saves $20 more on the discounted price*). While support is not required for Part B, the student likely calculated the regular price and the discounted price for the first month by substituting 1 in for *x* into both equations, solving each equation for *y*, and then subtracting the two values. [1 point]

Part C: The student provided an insufficient explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*it’s in the negatives*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**A10 Score 1**

Part A: The student correctly explains what the slope represents (*slope represents how much the gym charges per month*). The student’s explanation (*discounted price*) of what the *y*-intercept represents does not specify that the *y*-intercept is the discounted joining fee and no further credit is earned. Additionally, the student did not identify the 10 as the slope and the 5 as the *y*-intercept. [0.5 points]

Part B: The student provided an incorrect answer (*Justin saves 10 dollars the first month*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

Part C: The student provided an insufficient explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*it is a negative point*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**A11 Score 0**

Part A: The student incorrectly identified what the 10 represents (means how much it costs) and what the 5 represents (means how many months he will go). The 10 is not identified as either the slope or the monthly rate AND the 5 is not identified as either the y-intercept or the initial joining fee. [0 points]

Part B: The student provided an incorrect answer (*He saved $10 the first time*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

Part C: The student provided an incorrect explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*Because -25 is not on the graph*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**A12 Score 0**

Part A: The student incorrectly identified the slope (*slope = 5*) and what the slope represents (*slope shows you that what direction the numbers are going to*). The student also incorrectly identified the *y*-intercept (*y-intercept = 10x*) and what the *y­*-intercept represents (*y-intercept basicily shows you how the numbers start*). [0 points]

Part B: The student provided an incorrect answer (*The discounted price would be $15.00*). While support is not required for Part B, the student explains their answer (*it shows the regular price is $20. And the discount is $5 off*), which is an incorrect interpretation of the given equations. [0 points]

Part C: The student provided an incorrect explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*Because (-3, -25) has nothing to do with this problem*). The response does not recognize that negative numbers in this context are not realistic. [0 points]