**Grade 8 Justin Joins a Gym - Training Set 1 Annotations**

**T1-1 Score 1**

Part A: The student incorrectly identified the slope (*slope = 10x*). The student correctly identified the *y*-intercept (*y-intercept = (0, 5)*). The student’s explanations of what the slope and *y*-intercept represent in the given situation are incorrect (*The slope represents the discount, and the y-intercept represents the fee to join and the monthly rate*). [0.5 points]

Part B: The student provided an incorrect answer (*Justin saves $1.3 in the first month*). Though no support is required, the student attempts to solve for *y* in the given equation and comes up with 1.3, which is incorrect. [0 points]

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 he isn’t in the negative numbers*). The student did not associate the *negative numbers* with either time or money. [0.5 points]

**T1-2 Score 3**

Part A: The student correctly identified the slope (*m - 10*) and explained what the slope represents (*represents $ for monthly fees*). Note that the term "fees" is accepted as an explanation for the slope only because its meaning is clarified by the word "monthly." The student also correctly identified the *y*-intercept (*b - 5*) and explained what the *y*-intercept represents (*represents $ to join*). Note that, since *m* represents the slope and *b* represents the *y*-intercept in the standard form of the slope-intercept linear equation, the variables are acceptable in place of the names. [2 points]

Part B: The student provided the correct answer (*$20*). [1 point]

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 you have to compare, not contrast the points, therefore making it positive*). The response does not recognize that negative numbers in this context are not realistic. [0 points]

**T1-3 Score 4**

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

Part B: The student provided the correct answer (*Justin saved $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 a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*because it would mean that Justin is getting payed to not go to the gym which would not hapen*). The student correctly identified that negative numbers in this context are not realistic. [1 point]

**T1-4 Score 1**

Part A: The student incorrectly identified the slope and the *y*-intercept (*The slope is 5 and the y-intercept is 10*). The student did not explain what the slope and the *y-*intercept represent in the given context. [0 points]

Part B: The student provided an incorrect answer (*$25*). No support (work or explanation) is required, so it is unclear where an error was made. [0 points]

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 in this situation*). The student’s explanation is incomplete because they did not associate the *negative numbers* with either time or money. [0.5 points]

**T1-5 Score 2**

Part A: The student correctly identified the slope (*slope = 10*) and the *y*-intercept (*y-intercept = 5*). The student’s explanation of slope (*money… you would pay every month to get in*) was not given credit because the student also offered a second explanation (*the amount of months*) which is incorrect. The student incorrectly explained what the *y*-intercept represents (*the money you have left over*). [1 point]

Part B: The student did not provide a correct answer (*For the slope Justin saved $5. For the y-intercept Justin saved $15*). No credit is awarded for providing the individual savings for the fee to join and the monthly rate since the prompt asks for the total savings. [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 (*someone cannot have a negative amount of money*... *you can not have a negative amount of weeks*). Note: no deduction is made for using weeks instead of months since they both refer to time. Also note that it is not necessary to reference both negative time and negative money for full credit: either one is sufficient. [1 point]

**T1-6 Score 3**

Part A: The student correctly identified the slope (*The slope is 10*) and the *y*-intercept (*the y-intercept is 5*). The explanations provided for the slope (*the fee to join*) and the *y*-intercept (*the monthly rate*) are incorrect and receive no credit. [1 point]

Part B: The student provided the correct answer (*Justin saves $20 by joining the gym at 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 a correct and complete explanation as to why the point ( –3, –25) is not a possible solution in the given situation (*the negative numbers mean that the gym would be paying him to join*). The student correctly identified that negative numbers in this context are not realistic. [1 point]

**T1-7 Score 0**

Part A: The student did not identify the slope and the *y*-intercept. The explanations provided for the slope and the *y*-intercept (*price the gym charges*) are incomplete and insufficient. Although not required, the two explanations provided for the variable *x* are incorrect. [0 points]

Part B: The student provided an incorrect answer (*Justin saves $30*). [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 as time goes on Justin system will start to lose money*). [0 points]

**T1-8 Score 2**

Part A: The student correctly identified the slope and the *y*-intercept (*The slope is 10 and the y-intercept is 5*). The student incorrectly explained what the slope and the *y-*intercept represent in the given context (*The slope represents the discounted price and the y-intercept represents the monthly rate*). [1 point]

Part B: The student provided the correct answer (*Justin saves 20 dollars 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 (*you cannot have negative numbers in this situation*). The student’s explanation is incomplete because they did not associate the *negative numbers* with either time or money. [0.5 points]

**T1-9 Score 4**

Part A: The student correctly identified the slope (*The slope of this equation is the 10 of 10x*) and explained what the slope represents (*monthly rate*). The student correctly identified the *y*-intercept (*The y-intercept of the equation is 5*) and explained what the *y*-intercept represents (*fee to join the gym*). [2 points]

Part B: The student provided the correct answer (*Justin saves 20 dollars 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 discounted price (*y = 10x + 5*), substituting 1 for *x*, and then evaluating the equation to get *y* = 15. The student then took the regular price equation (*y = 15x + 20*), substituted 1 for *x*, and then evaluated the equation to get *y* = 35. [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 join for a negative amount of months... the -25 would mean the gym is paying for you to go there*). The student correctly identified that negative numbers in this context are not realistic. [1 point]

**T1-10 Score 3**

Part A: The student incorrectly identified the slope (*10x*), but correctly explained what the slope represents (*how much you have to pay per month*).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 saves $20 his first month*). [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 (*because you cannot have a negative number of months and money in this situation*). The student correctly identified that negative numbers in this context are not realistic. [1 point]