Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

**STAAR Review – Algebraic Thinking**

|  |
| --- |
| **Scatterplots** |
| 1. |
| 2. |
| 3. |
|  |
| **Solve Equations by Intersections**To find the solution to an equation with variables on both sides, graph both sides of the equation and look for the intersection point. When solving for *x*, the solution is the *x*-value of the intersection point. |
| 4. Solve the equation, for the *x*-value.  Intersection point: \_\_\_\_\_\_\_\_\_\_\_ *x* = \_\_\_\_\_\_\_\_ |
| 5.  |
|  |
| **Finding the slope and *y*-intercept of a line** |
| 6.What is the slope of the line? \_\_\_\_\_\_\_\_\_\_\_\_\_\_What is the y-intercept of the line? \_\_\_\_\_\_\_\_\_\_\_ |
| 7.What is the slope of the line? \_\_\_\_\_\_\_\_\_\_\_\_\_\_What is the y-intercept of the line? \_\_\_\_\_\_\_\_\_\_\_ |
| 8.What is the slope of the line? \_\_\_\_\_\_\_\_\_\_\_\_\_\_What is the y-intercept of the line? \_\_\_\_\_\_\_\_\_\_\_ |
|  |
| **Tables** |
| 9.**Tech Tip:**Graph each expression in the answer choices.Use *x* instead of *n*.Use **Ctrl T** to view the table to see if the expression matches the sequence. |
| 10. |
| 11. If the weight of the bar without any plates is represented by the *y*-intercept, what is the weight of the bar? |
| 12. **Tech Tip:**For each of the answer choices, type the table in a Spreadsheet (New Document and then choose Lists and Spreadsheets.)Insert Page and choose Data and Statistics page.To find the equation, go to Menu 🡪Analyze 🡪 Regression 🡪Show Linear (mx + b) |
| 13. **Problem:** Write the equation of the table below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***x*** | 2 | 4 | 6 | 8 | 10 | 12 |
| ***y*** | 10 | 13 | 16 | 19 | 22 | 25 |

Three friends were studying for their math test. They each had different ideas about how to answer the problem. Each student’s answer to the problem is shown below.

|  |  |  |
| --- | --- | --- |
| **Katy** | **Ryan** | **David** |
| Slope =  and y-intercept = (0, 7) | Slope =  and y-intercept = (0, 7) | Slope =  and y-intercept = (0, 7) |

* Who is correct? Why?
* How would you help the friend(s) that calculated the problem incorrectly?
 |
| **Write and Solve Equations**For each word problem, write an equation and then solve the equation. |
| 14. |
| 15. |
| 16. |
|  |
| **Points of an Equation**Remember to use your calculator wisely!Remember: the table, list of ordered pairs, graph, and mapping are all different views of the same information. |
| 17.**Tech Tip:**Graph the equation.Use **Ctrl T** to view the table to see which list of points is the answer. |
| 18.**Tech Tip:**Graph the equation.Use **Ctrl T** to view the table to see which list of points is the answer.Remember, the table, list of ordered pairs, graph, and mapping are all different views of the same information. |
|  |
| **Direct Variation (Proportional Situation)**If y varies directly with x, it means y is proportional to x. Write and solve a proportion. |
| 19. |
| **Points on a Graph**Count the slope of the line and continue in the same pattern. In this example, from one point to the next, count up 4 and to the right 1. Continue the pattern for 5, 6, 7, and 8 flags. |
| 20. |
|  |
| **Write Equations from Word Problems AND Write Word Problems that match an Equation**  |
| 21. |
| 22. |
| 23. |
| 24. |
| 25. |
|  |
| **Is it a Function?**Are the x-values unique? If yes, the data represents a function.Does the graph pass the vertical line test? If yes, the data represents a function. |
| 26. |
| 27. |