**Carnival Sort - Answers**

Complete each of the tables below based on the given scenario. THEN, determine whether the situation is more similar to Ring Toss or to Balloon Pop.

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| Scenario 1  **Tickets for the carnival are $7 per person. How much does it cost for x people?**   |  |  | | --- | --- | | # of people | Cost | | 1 | 7 | | 2 | 14 | | 3 | 21 |   *Ring Toss or Balloon Pop?*  *y = 7x* | Scenario 2  **Jillian’s friend gets to the carnival 30 minutes after her. How long has Jillian been there when her friend has been there x minutes?**   |  |  | | --- | --- | | Friend’s Time (mins) | Jillian’s time (mins) | | 10 | 40 | | 20 | 50 | | 50 | 80 |   *Ring Toss or Balloon Pop?*  *y = x + 30* | Scenario 3  **The total number of people at the carnival includes the patrons and the employees. There are 16 employees working at the carnival at all times. How many total people are there when x patrons are there?**   |  |  | | --- | --- | | Patrons | Total People | | 0 | 16 | | 40 | 56 | | 80 | 96 |   *Ring Toss or Balloon Pop?*  *Y = x + 16* |
| Scenario 4  **Each car on the roller coaster can hold 2 people. How many people fit in x cars?**   |  |  | | --- | --- | | # of cars | # of people | | 1 | 2 | | 5 | 10 | | 10 | 20 |   *Ring Toss or Balloon Pop?*  *y = 2x* | Scenario 5  **You need four tickets to ride each ride. How much does it cost for x number of riders?**   |  |  | | --- | --- | | # of rides | # of tickets | | 0 | 0 | | 2 | 8 | | 4 | 16 |   *Ring Toss or Balloon Pop?*  *y = 4x* | Scenario 6  **Steve has already eaten 3 bags of popcorn. If his friend dares him to eat another bag of popcorn every hour, how many bags of popcorn will Steve have eaten after x hours?**   |  |  | | --- | --- | | Hours | # of bags | | 0 | 3 | | 1 | 4 | | 2 | 5 |   *Ring Toss or Balloon Pop?*  *y = x + 3* |

**Writing Equations** – Notes

\*There are many ways you could choose to do these notes. You don’t want to completely overwhelm students by trying to teach everything there is about each relationship. The focus for this lesson should simply be identifying the relationship and the type of equation and graph that come with it. If your students are easily overwhelmed, you may want to remove the graphing piece from the notes altogether and save that for a different day!

You will need additional lessons to go into depth around the equations and graphing using slope or y-intercept.

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| **Proportional (Multiplicative) Relationship** | **Additive Relationship** |
| Relationship (table):  Sally earns $8 per hour babysitting.   |  |  | | --- | --- | | x | y | | 0 | 0 | | 2 | 16 | | 4 | 32 |   \*talk to students about the patterns – multiply x by same number to get y  Equation:  **Y = mx**  **M = the rate of change or the slope; the number you multiply x by to get y**  Example that goes with the table above: y = 8x  Graph looks like:  \*starts at the origin. Might be steep or more flat depending on M. Have students graph the points in the table and connect with a line.  DO NOT teach how to graph using slope specifically in this lesson. FOCUS on what the relationship is and what m is. | Relationship (table):  Sally already has $10, she earns an additional dollar for each day that she makes her bed.   |  |  | | --- | --- | | x | y | | 0 | 10 | | 2 | 12 | | 4 | 14 |   \*compare this table to the one on the left – do you multiply x by the same number to get y? No, you add the same number to x to get y  Equation:  **Y = x + b**  B = the y-intercept OR the value when x = 0  Example for the table: y = x + 10  Graph looks like:  \* starts at (0, b). Will always be up one, over one from there. Have students graph the points in the table and connect with a line.  DO NOT worry about slope of 1 in this lesson. FOCUS on what the relationship is and what b is. |