*Bottle Filling – Part 1*

Your group has two bottles that each hold about 240 ml. As each bottle is filled with water, what is the relationship between the volume of the water in the bottle and the height of the water in the bottle?

Before filling the bottles with water, prepare two grids (one for each bottle) with *x* = the volume of the water in the bottle (in ml) and *y* = the height of the water in the bottle (in cm). Then analyze each bottle and sketch your prediction of what the graph will look like. What strategies did you use to make your prediction?

Now, using 10 ml increments, fill each bottle with water. After each 10 ml portion is added, measure the height of the water in each bottle to the nearest 0.1 cm. Be care to measure as accurately as possible. Record your data in the table below. Then plot your data on the grid with your predicted graph for each bottle.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *x* (ml) | *y* (cm) | *x* (ml) | *y* (cm) |  | *x* (ml) | *y* (cm) | *x* (ml) | *y* (cm) |
| 10 |  | 130 |  |  | 10 |  | 130 |  |
| 20 |  | 140 |  |  | 20 |  | 140 |  |
| 30 |  | 150 |  |  | 30 |  | 150 |  |
| 40 |  | 160 |  |  | 40 |  | 160 |  |
| 50 |  | 170 |  |  | 50 |  | 170 |  |
| 60 |  | 180 |  |  | 60 |  | 180 |  |
| 70 |  | 190 |  |  | 70 |  | 190 |  |
| 80 |  | 200 |  |  | 80 |  | 200 |  |
| 90 |  | 210 |  |  | 90 |  | 210 |  |
| 100 |  | 220 |  |  | 100 |  | 220 |  |
| 110 |  | 230 |  |  | 110 |  | 230 |  |
| 120 |  | 240 |  |  | 120 |  | 240 |  |