Convert the following base 10 numbers to base 2. Write out your answer with six binary digits. Then, complete the graphic on the second page below by shading in those cells that correspond to ‘1’s in your base 2 number. The first two have been done for example.

Show all work!

|  |  | **A** | | | | | |  | **B** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Base 10** | **Base 2** | | | | | | **Base 10** | **Base 2** | | | | | | | | | | |
| **1** | 2410 | 24 / 2 = 12 r 0  12 / 2 = 6 r 0  6 / 2 = 3 r 0  3 / 2 = 1 r 1  1 / 2 = 0 r 1  2410 = 110002 or 0110002 | | | | | | 1210 | 12 / 2 = 6 r 0  6 / 2 = 3 r 0  3 / 2 = 1 r 1  1 / 2 = 0 r 1  1210 = 11002 or 0011002 | | | | | | | | | | |
| 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | | | 1 | | 1 | | 0 | | 0 |
| **2** | 410 |  | | | | | | 1610 |  | | | | | | | | | | |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | 0 | | 0 | | 0 | | 0 |
| **3** | 1510 |  | | | | | | 5610 |  | | | | | | | | | | |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 0 | | 0 | | 0 | |
| **4** | 2710 |  | | | | | | 4410 |  | | | | | | | | | | |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | | 0 | 1 | | 1 | | 0 | | 0 | |
| **5** | 6310 |  | | | | | | 6210 |  | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | | 1 | | 0 | |
| **6** | 4710 |  | | | | | | 5810 |  | | | | | | | | | | |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 0 | | 1 | | 0 | |
| **7** | 4010 |  | | | | | | 1010 |  | | | | | | | | | | |
| 1 | 0 | 1 | 0 | 0 | 0 | 0 | | 0 | 1 | | 0 | | 1 | | 0 | |
| **8** | 610 |  | | | | | | 4810 |  | | | | | | | | | | |
| 0 | 0 | 0 | 1 | 1 | 0 | 1 | | 1 | 0 | | 0 | | 0 | | 0 | |

|  | A5 | A4 | A3 | A2 | A1 | A0 | B5 | B4 | B3 | B2 | B1 | B0 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| 4 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 6 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 8 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |