Write the Triangle each statement:

1. 4 raised to the power of 2 results in the number 16

2. 5 raised to the power of –2 results in the number 1/25

3. 2 is the exponent that is placed on base 4 resulting in the number 16

4. 1/3 is the exponent placed on base 8 to obtain the number 2.

5. p is the exponent placed on base 7 to obtain the number 49.

6. p is the exponent placed on base b to obtain the number n.

7. Complete the chart below which details the relationship 4△np. Remember that b△m·b△n=b△m+n

n p n p n p n p

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number | Exponent | Number | Exponent | Number | Exponent | Number | Exponent |
| 1 |  | 7 | 1.404 | 13 | 1.850 | 19 | 2.124 |
| 2 |  | 8 |  | 14 |  | 20 |  |
| 3 | 0.792 | 9 |  | 15 |  | 21 |  |
| 4 | 1.000 | 10 |  | 16 |  | 22 |  |
| 5 | 1.161 | 11 | 1.730 | 17 | 2.044 | 23 | 2.262 |
| 6 |  | 12 |  | 18 |  | 24 |  |

8. Apart from 4, what kind of numbers hd been filled in for you for p? Why?

Unfortunately, it is important to be familiar with traditional notation, if for no other reason that to be able to use your TI-8\*! 23=8 ; ∛8=2 ; and log28=3 are all obtuse ways of writing 2△38. Use your chart above (and not a calculator) to solve the following:

9. 1.730 = log4\_\_\_

10. \_\_\_ = log419

11. 3 = log4\_\_\_\_

12. log4\_\_\_\_=1.161

13. log416 = \_\_\_\_

14. log4\_\_\_ = 2.808

Complete the mystery chart and tell what the base must be:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number | Exponent | Number | Exponent | Number | Exponent | Number | Exponent |
| 1 |  | 7 | 1.210 | 13 | 1.594 | 19 | 1.829 |
| 2 | 0.431 | 8 |  | 14 |  | 20 |  |
| 3 | 0.683 | 9 |  | 15 |  | 21 |  |
| 4 |  | 10 |  | 16 |  | 22 |  |
| 5 |  | 11 | 1.490 | 17 | 1.760 | 23 | 1.948 |
| 6 |  | 12 |  | 18 |  | 24 |  |