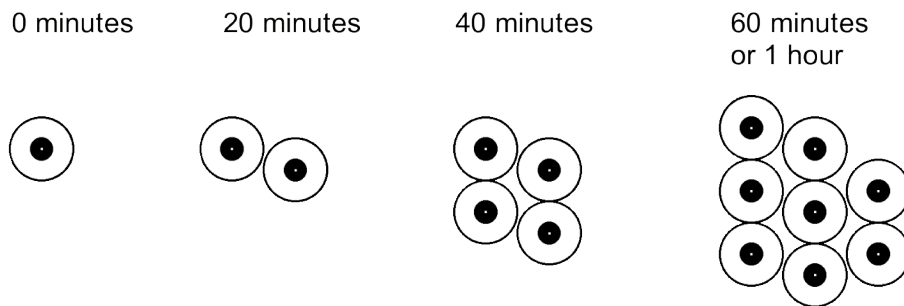


Multiplying Cells



Mrs. Lucas’s class has a 2-hour science lab.

She gives each student a dish with one cell in it.

She tells the class that in 20 minutes the cell will divide into two cells, and each 20 minutes after that **each** cell in the dish will divide into two cells.

1. Complete the second row in this table to show how the number of cells increases during the lab.

Time (minutes)	0	20	40	60	80	100	120
Number of cells	1	2	4				
Number of cells as a power of 2	2^0	2^1					

2. Olan says that the numbers of cells can be written in the form 2^n .

Complete the third row in the table to show how the number of cells can be written in this form.

3. Linda says that the number of cells after 3 hours will be 2^7 ($= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$)

Is she correct? _____

If not, then what is the correct number? _____

Explain how you figured it out.

4. How many cells will be in the dish after 5 hours? _____

Give your answer as a normal number, not as a power of 2.

Show how you figured it out.

5. How long will it take for the number of cells to reach at least 100,000?

Give your answer to the nearest 20 minutes. _____

Show how you figured it out.