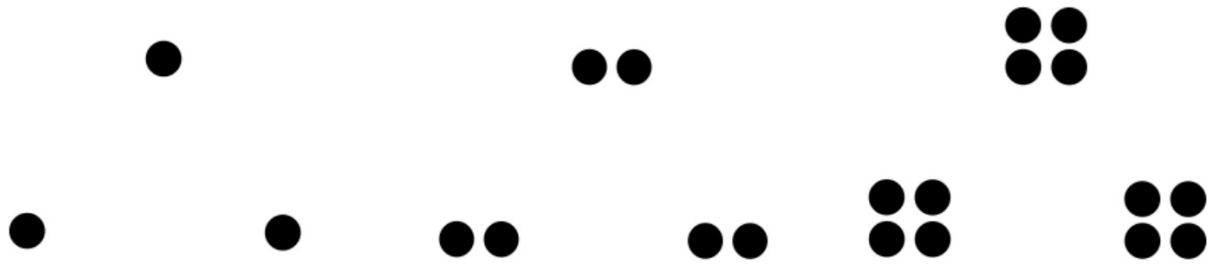
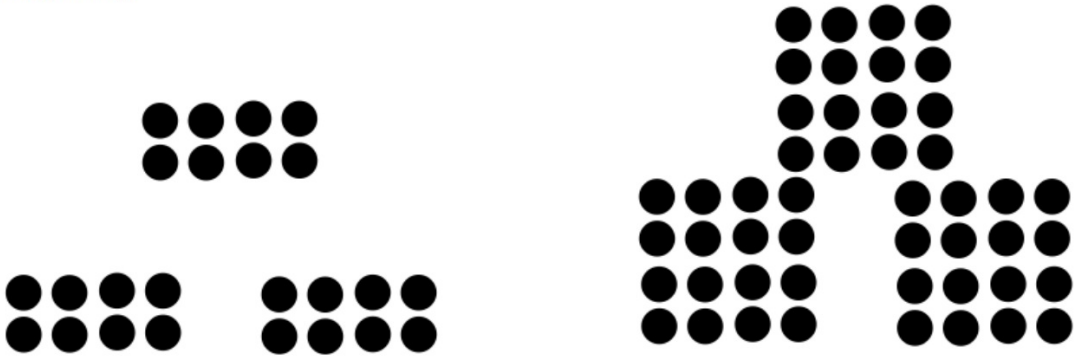


At the beginning

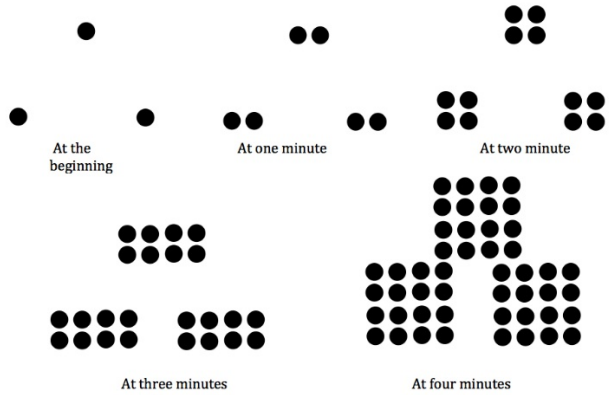
At one minute

At two minute



At three minutes

At four minutes

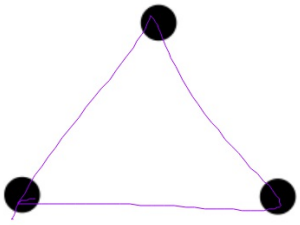



1. Describe and label the pattern of change you see in the above sequence of figures.

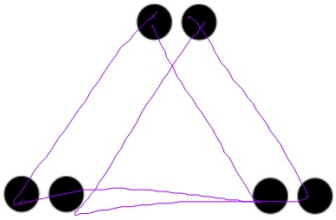
2. Assuming the sequence continues in the same way, how many dots are there at 5 minutes?

3. Write a recursive formula to describe how many dots there will be after $t$ minutes.

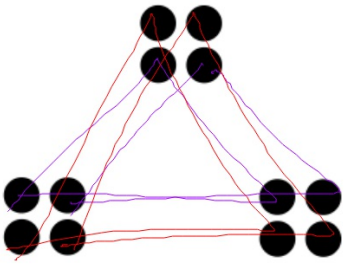
4. Write an explicit formula to describe how many dots there will be after $t$ minutes.



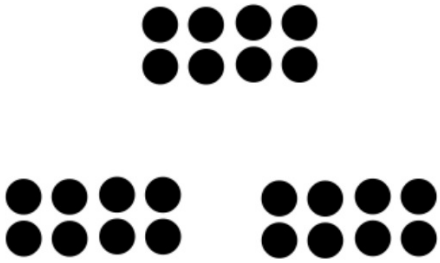
At the beginning



At one minute

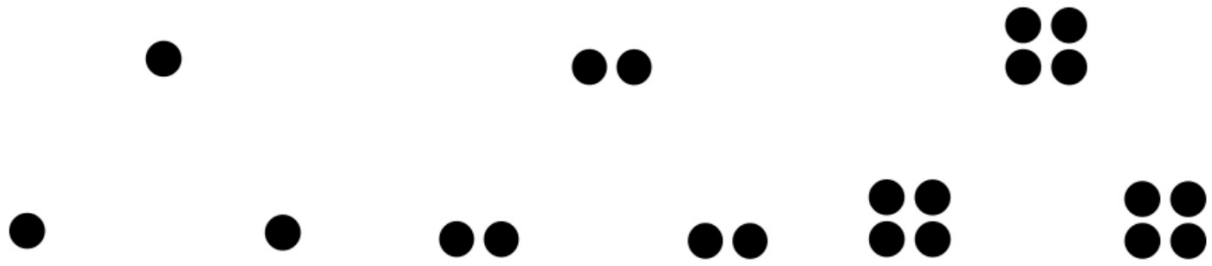


At two minute



At three minutes

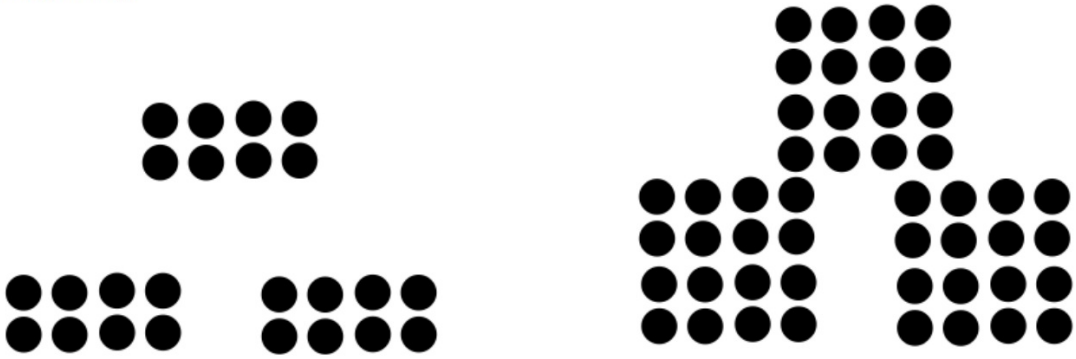
At four minutes



At the beginning

At one minute

At two minute



At three minutes

At four minutes

| time | DOTS | PROCESS | Use this to find the explicit equation |
|---|---|---|---|
| 0 | 3 | $3 = 3(2)^0$ | |
| 1 | 6 | $3(2) = 3(2)^1$ | |
| 2 | 12 | $3(2)(2) = 3(2)^2$ | |
| 3 | 24 | $3(2)(2)(2) = 3(2)^3$ | |
| 4 | 48 | $3(2)^4$ | |
| 5 | 96 | $3(2)^5$ | |
| 100 | NEXT = LAST x 2 | $3(2)^{100}$ | |
| t | | $3(2)^t$ | |

Recursive (Next?) Formula

Remember $2^0 = 1$

$3(2^0) = 3(1) = 3$

Explicit Equations

$y = 3 \cdot 2^x$