

Good afternoon

Welcome to AP Calculus

Sit where you like, every seat will be occupied :o

You will need a device today :)



gnaw-there  
mow-you-dean

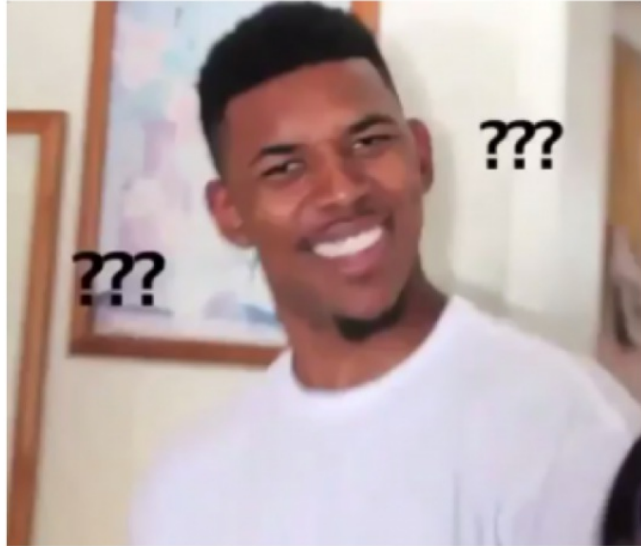
نادر محي الدين

## Contemplate, then Calculate

An image will be on the screen for exactly 3 seconds

How many dots are in the figure?





WHAT : Practice looking for shortcuts and strategies using what you know about the way numbers, shapes, and space work

WHY : To “think like mathematicians,” to use *mathematical structure* to find shortcuts and strategies

Notice



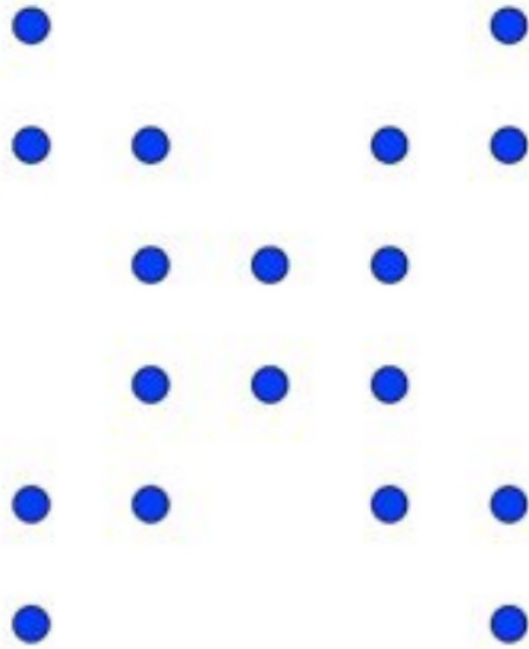
Find Calculation Shortcut 

Share and Study Shortcuts



Reflect on Learning





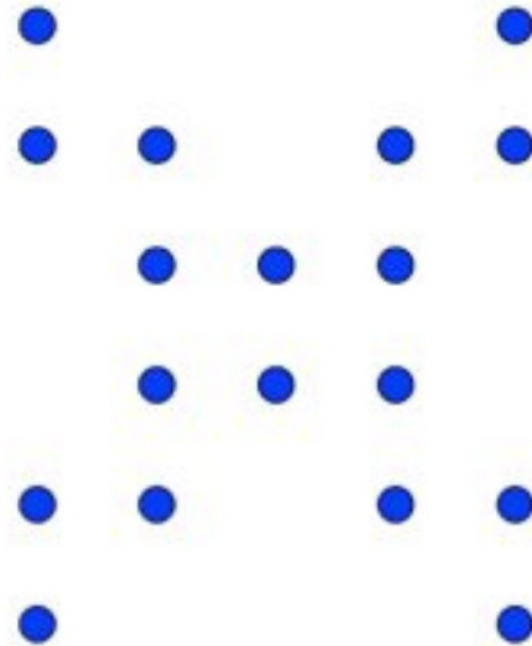
What did you notice?

Tell your table

Start with the person closest to the door  
and move to their left

Quietly and quickly  
count the dots in your head

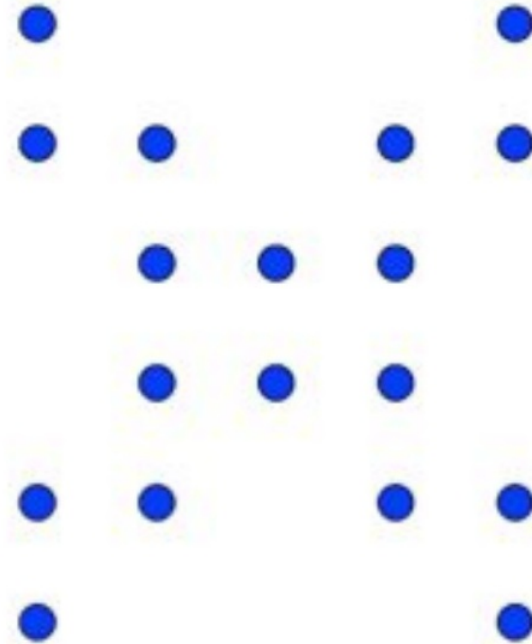
Give me a thumbs up  
to indicate you're done



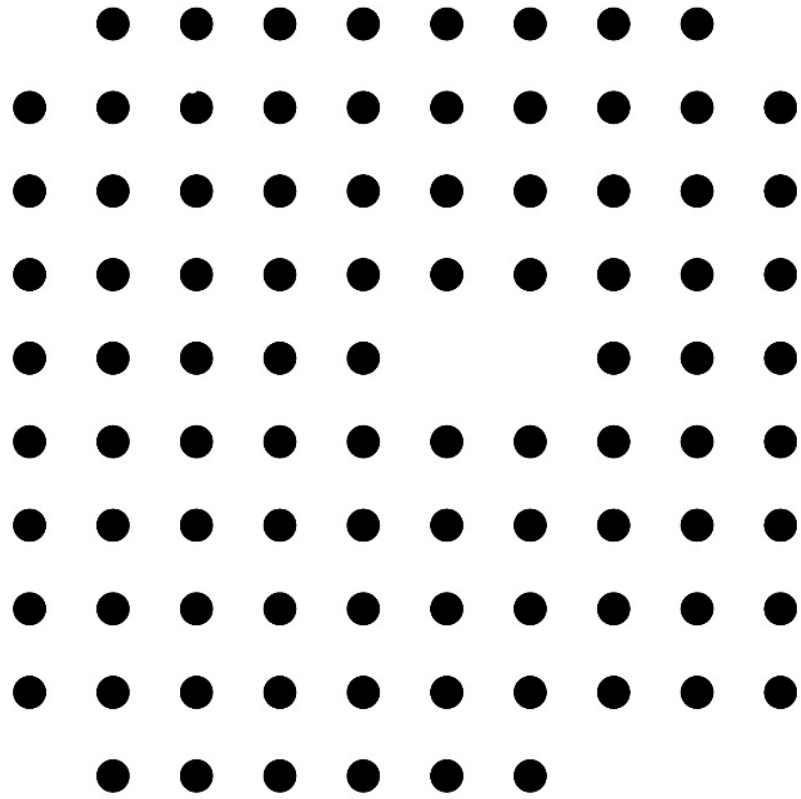


Share your strategy with  
your table.

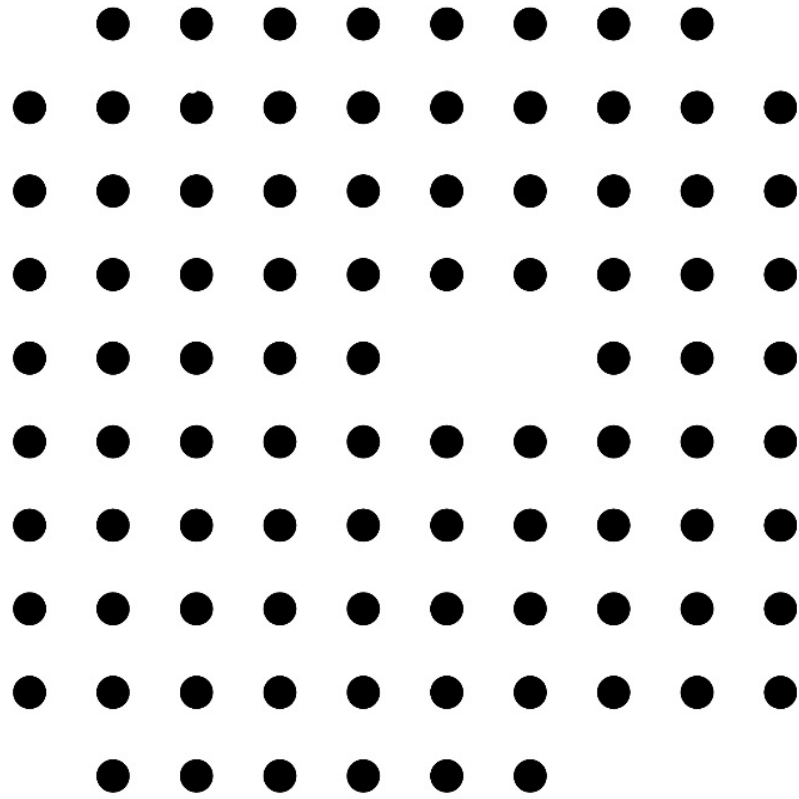
The person who went last  
previously goes first this

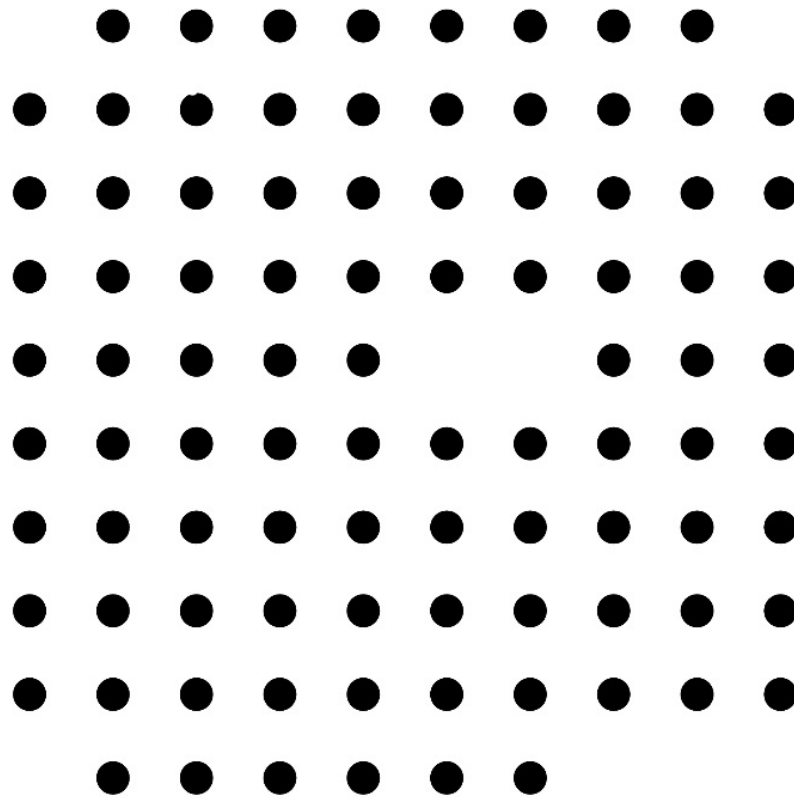


Another!



Turn and talk





How many?

How did you  
count?

Discuss.

## Reflect

What should you look for in developing shortcuts and mathematical techniques?

## Agenda

- Thinking like a calculus student
- Broken speedometer activity
- Syllabus/Grading system
- Student Information Form



<http://pollev.com/nmhcde875>

**DON'T WORK AHEAD!!!**

<https://www.youtube.com/watch?v=5Px6fajpSio>

(notes)

Suppose you are traveling in car with a broken speedometer but a working odometer (mileage).

How do you figure out your speed at 2pm?

$$\begin{aligned} \text{Speed}_{2\text{pm}} &\approx \frac{D(2\text{p}+5) - D(2\text{p})}{5} \\ &\approx \frac{D(2\text{p}+3) - D(2\text{p})}{3} \\ &\left\{ \frac{D(2\text{p}+\Delta t) - D(2\text{p})}{\Delta t} \right. \\ &\quad \left. \frac{D(\cancel{2\text{p}+0} + \Delta t) - D(2\text{p})}{0} = \frac{0}{0} \text{ // } \right. \\ &\lim_{\Delta t \rightarrow 0} \frac{D(2\text{p}+\Delta t) - D(2\text{p})}{\Delta t} \\ &\text{ } \end{aligned}$$



What is calculus all about?

<https://youtu.be/WUvTyaaNkzM?t=2m30s>

## Who is Mr Mohyuddin again??

- eighth year of teaching math, fifth of HS math
- born and raised in TN
- Made 5's on both AP Calculus tests :)
- Majored in math and English at Duke
- Masters at UTC
- likes travel, reading, film, cats



Who are you???

[mcalc.weebly.com](http://mcalc.weebly.com)



REMIND:

to: 81010

@apcalc178

## Syllabus

Bring notebook with you EVERY DAY

Never ever take notes on loose leaf

Don't use this notebook for any other class

3 dividers in binder: HW, Handouts, Assessments





## Homework:

- have parents fill out survey (linked on syllabus)
- pay \$5 math fee (can do online, link at website)



