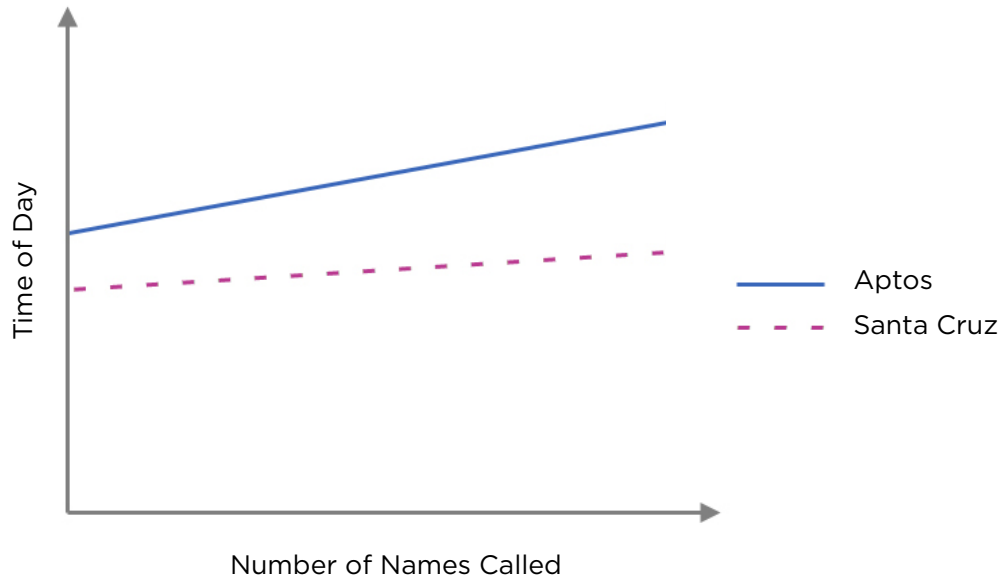


Graduation

designed by **Dan Meyer**
on **11 Dec 18**
for **IMP**
to address **8.F.4**

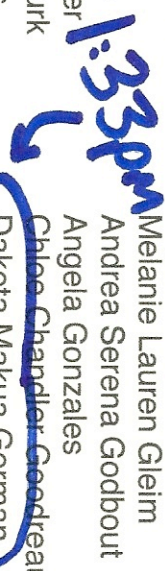
The SLV High School graduation started at 1:00PM. After some speeches, the principal started reading off the names of the students, alphabetically by last name. When she finishes, the graduation will end.

1. Use the bulletin on the following pages to estimate when the graduation will end.
2. Estimate how long the speeches took. How do you know?
3. Write an equation that the parents could use to find the approximate time the principal will call their child's name given the child's place in the list in the graduation program.
4. Aptos High School and Santa Cruz High School started their graduations at the same time. The graphs shown below show the time of day as a function of the number of names the principal has read at each school. Write down as many differences between the two graduations as you can based on differences in the two graphs. Give your reasons for each.



**San Lorenzo Valley High School
Class of 2011**

Micah Stephen Adams	Amber Anne Chase	Nicholas Gregory Hargraves	Matthew Alexander Lipperd
Xavier Josue Alvin	Faye Elise Chavez	Alexander Samuel Harnett	Madeline Elizabeth Lopez
Connor James Antisdal	David Thomas Chesus	David Michael Hart	Emily Marie Madison
David Zachary Baker	Zoe Darlene Chinn	Melissa Lorraine Harvey	Rebecca Lynn Makita
Bradley Garrett Barnard	Emily Elizabeth Clements	Olivia Louise Herrera	Savanna San Mangelsen
Joseph Barnes	Claire Elizabeth Cloud	Kasia Adair Hill	Zane Michael Markham
James Alexander Barnes	Steven Dennis Connelly	Ludmila Eliana Hipsley	Alfredo Martinez
Michael Barton	Conor Thomas D'Amato	Jazelle Gina Hooper	Tyler Cameron Mattson
Sarah Raisha Beasley	Cassandra Suzanne Davis	Mariah Donna May Hopkins	Wayne Thomas McCarthy
Allison Rose Beasley	Lauren Marie Dempewolf	Lindsey Marie Hoppin	Theos Christopher McClish
Emily Anne Bechtle	Blake Bradley Dennis	Bryn Kathryn Horton	Annelise Marie McFarland
Brandon Scott Beavers	Jake Madison Debreuil	Thomas John Housek	Alexander Michael McIntosh
Patrick Ferava Belardi	Shannon Elaine Eisner	Ellen Joanne Innis	Dominique Sharee McIntosh
Kaitlyn Ella Benson	Emily Anne Engel	Jordan Isaacson	Victoria McKenzie
Jordan Starr Thomas Bereman	Samantha Marie Ferguson	Joseph Clifford Jansen	Violet Josette McNally
Taylor Renee Foster Berritto	Dominique Angelina Jones	Allison Kirstine Janus	Kendra Dee Messimer
Ashley Michelle Ann Billington	Cherina Marie Freitas	Nettie Pearl Mitchell Johnson	Marisa Grace Brudnick
Morgen King Biswa	Anju Friend	Lacey Marie Johnson	Sage Nicole Monack
Jaelyn Kate Black	Nathaniel Justin Fruzza	Felipe Johnson	Thomas Ocean Moreno
Xitlali Borreson	Mariah Nichole Galmez	Shelby Danielle Johnson	Rainbow Roxanne Muchamuel
Chere Nicole Brandon	Robin Lavendar Garcia	Zachary David Johnson	Nicholas Jefferey Newberry
Sydney Lauren Garcia Breili	Ronja Andrea Franklin	Dakota Shea Jones	George Austin Norfleet
Curtis Martin Brewer	Mason Garrett	Tanner William Jones	Travis James Nugent
Katherine Evelyn Brown	Kayle Anne Genis	Clara Joy Kamau	Joseph Carl Olson
Annika Bruce	Melanie Lauren Gleim	Mia Anne Kellogg	Lacie Marie Orlando
Amanda Lynn Bruce	Andrea Serena Godbout	Maxine Elaine Kelly	Mary Elaine Ivy Orr
David Michael Burgler	Angela Gonzales	Ryan Scott Kennedy	Austin Leonard Overton
Journalan Donovan Burk	Chloe Chandler Goodreau	Jenny Rae Kersten	Haley Lauren Pace
Nicholas Ryan Burks	Dakota Makua Gorman	Andrew Benjamin King	James Evan Paolini
Joseph Thomas Burton	Donnae Jessie Greer	Russell Theodore Klair	Timothy William Parker
McLean Avery Camacho	Michael Marie Grindw	Zachariah Waya Tsgifi Kius	Carson Taylor Paynter
Alexander Austin Campbell	Erin Cassidy Grosword	Christina Rose Knoll	Zachary Alan Peabody
Jason William McGregor	Krista Marie Grunberger	Jessica Danielle Kraft	Katrina May Pearce
Taylor James Casey	Tyler Alan Hagen	Jessica Ann Lacy	Samuel Jackson Pelphrey
Kory Daniel Chadwick	Hazel Gladys Jane Haikkila	Joseph Allan Landry	Chandler Elizabeth Perazzo
Audrey Elizabeth Chapin	Marcus Taylor Halversen	Abbie Mae Leveque	Sebastian Thomas Peterson

1:33pm


**San Lorenzo Valley High School
Class of 2011**

Hannah Mae Petras	Rachel Ana Unti	Graduation coordinators:	
Rachael Danielle Pfister	Natalie Vernazza		Class President - Hazel Haikkila
Jesse Dean Phillips	Rochelle Whitney Viele		Vice President - Lindsey Hoppin
Saree Iris Potter	Carson Alexander Walker		Secretary - Morgen Biswa
Kirstin Jane Prather	Daniel Herrera Wetterhorn		Treasurer - Bradley Barnard
Haley Brooke Prunella	Quillan Arthur White	Principal	Michael Billings
Brittany Lynette Ramirez	Jessica Lynn Whitehill	Assistant Principal	Keri Arredondo
Sondra Marie Raymond	Stephanie Anne Wildman		Leslie Ebbage
Nathan Dawes Reader	Jessica Kayla Wood		Noreen Rorden
Kristy Marie Rector	Alaiha Kathleen Wylie	Counselors	Annabel Nolan
Sergio Aldo Ringelman	Peter Francis Zavaroni		Jeff Burns
Christopher Ross Rinkert			
Joshua David Roberts			
Lara Elaine Rodriguez		Board of Trustees	Kip Dakota, President
Brandon Bouchard Ruiz			Lea Tellez, Clerk
Kaiya Irene Salangsang			Laura Ritchie, Trustee
Erik Mark Sanchez			Kathy Wylie, Trustee
Fiona Darlene Sans			George Dolson, Trustee
James Trevor Sawyer		Superintendent	Julie Belardi
Jared Warrior Schell		Director Student Activities	Leslie Ebbage
Lisi Melissa Sherrell		Program cover artwork	Shannon Haff '11
Jessica Marie Simonson			
Megan Danielle Skrabak			
David Tayamen Sladwick			
Logan James Smith			
Elizabeth Smith			
Dillon Sean Sohoza			
Nicolas Aaron Sovulewski			
Miles Ransom Staggs			
Bruce Louis Steinberg			
Matthew McCrea Stewart			
Kelsey Anne Stiller			
Daniel Todd Sutton			
Deanna Marie Tindell			
Arianna Jordan Townsend			
Joseph Ryan Tumbale			

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#1

The principal had read 40 names by 1:28 and 65 names by 1:33. That yields a differential of 25 names in 5 minutes or 5 names per minute. There are 126 names remaining to be called.

$$\frac{126 \text{ names}}{5 \frac{\text{names}}{\text{minute}}} = 25.2 \text{ minutes}$$

The graduation will last approximately 25 minutes after 1:33 which means **it will end at approximately 1:58.**

#2

The initial 40 names took $40 \text{ names} \cdot \frac{1 \text{ minute}}{5 \text{ names}}$ or 8 minutes to read. We know the 40th name was read at 1:28, which means the principal began reading names at 1:20. Since the graduation itself started at 1:00, the speeches took **20 minutes.**

#3

The principal began reading names at 20 minutes past 1:00. Each name requires 1/5 minutes, so one equation would be:

$$t = \frac{n}{5} + 20$$

n is the child's order in the graduation and **t** is the number of minutes past 1:00 the child's name will be called.

#4

Aptos started calling names later because its y-intercept is greater. Aptos calls out names slower because its slope (the units of which is "minutes per name") is greater.