What does an Animator do?

- An animator is an artist who creates multiple images called frames and keyframes that form an illusion of movement called animation when rapidly displayed. Animators can work in a variety of fields including film, television, video games, and the internet.

- “I remember as a mathematics student thinking, ‘Well, where am I ever going to use simultaneous equations?’ And I find myself using them every day, all the time now”, express Tony DeRose, a computer scientist from Pixar Animation Studios. He has a PhD in computer science, specialty in computational physics, a decade as a professor of computer science and engineering at the University of Washington.
Usage of Math

- Math allows the animator to find unknowns from a simple set of equations and to work out aspects of geometric figures when you are dealing with objects that move and change.
- An animator uses linear algebra to show the way that an object is rotated and shifted and made larger and smaller—all major actions in animation.

Required Math:

- College Algebra, Trigonometry, Geometry, Calculus I & II, and Linear Algebra
Math Problem

The value of an avar controlling the x-coordinate of a ball is 44 in frame 121, and 104 in frame 126. The x-coordinate of the ball between those frames is determined by linear interpolation.

What is the value of the ball's x-coordinate in frame 123?
When mathematicians talk about **linear interpolation**: They know that a **constant change** is implied. Thus, if a ball is 44 in frame 121, and 104 in frame 126. What is the ball’s x-coordinate in frame 123?

![Diagram showing linear interpolation between 44 in frame 121 and 104 in frame 126, with unknown value in frame 123 indicated by a question mark.](image_url)
Education

- **Bachelor’s Degree in Fine Arts (4 years):** Students will graduate with a professional portfolio or demonstration reel, showcasing knowledge of life drawing and an understanding of movement and acting.
- **Masters in Fine Arts in Animation and Visual Effects** focuses on storytelling with an emphasis on technical acuity and emotional response.
- **PhD in 3D Animation** specializes in 3D animation within a program in electronic arts, media arts and practice, arts and technology or a related area. Students have the chance to further develop their skills and portfolios, the primary focus of these programs is research.
Education

- Must have one year of experience through internships or entry-level positions.
- Animators should attend classes that teach advanced software features and address industry trends to extend their knowledge in animation.
Work Cited

- http://weusemath.org/?career=animator
- http://www.academyart.edu/academics/animation---visual-effects/online-degrees
- http://study.com/how_to_become_an_animator.html
- https://www.khanacademy.org/partner-content/pixar/animate/parametric-curves/e/linear-interpolation