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Constructing the disk method formula for the volume obtained by revolving a curve around an axis with the help of CAS.

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Summary: Calculus concepts should have been taught in a carefully designed learning environment, because these concepts constitute a very important base for almost all applied sciences. The integral, one of the fundamental concepts of Calculus, has a wide application area. This paper focuses on constructing the disk method formula for the volume obtained by revolving a curve around an axis with the help of a CAS. In this study, a semi-structured interview was carried out. In this interview, we tried to construct the disk method formula. The levels of constructing the disk method formula in this study are: • Introducing the concept: evaluating the volume of an Egyptian pyramid. • Evaluating the volume of a cone obtained by revolution (using Maple worksheet). • Designing their own ring and evaluating its price (using Maple). In this study, the interview has been presented as a dialog between teacher and students. When we look at feedback from students, we see that such a teaching method effects students in a positive way and causes them to gain conceptual understanding directed towards the concepts of approximation and volume.

Classification: I55 D45 C75 R25
Keywords: Maple; Maplet; approximations; volume; definite integral; teaching-learning processes;