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"CONVENIENCES OF AUTOCAD SOFTWARE FOR DRAFTING. (DIVIDING A CIRCLE INTO EQUAL PARTS)."

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ANNOTATION

Annotation. Simple Primitives in the AutoCAD Graphics Software. Analytical Methods of Designing with Complex Primitives. Stages of Design. The Design Process. Creating a Flat Contour Part Drawing in AutoCAD Graphics Software. Rotating, Moving, Mirroring, and Stretching Objects. Constructing Objects in AutoCAD Graphics Software. Applying Sections, Extruding, Joining, Adding Dimensions, and Scaling Objects. Constructing Objects Using Editing Tools in AutoCAD Graphics Software.

Keywords: AutoCAD graphics software, simple primitives, complex primitives, analytical methods, design stages, design process, rotating objects, moving, mirroring, stretching.

Introduction. Drafting is one of the fundamental subjects in technical and engineering education, where the rules of representation, projection of geometric shapes, and their spatial orientation are taught. In traditional teaching methods, paper and drafting tools have been commonly used. This article presents the history of the AutoCAD software, its conveniences in drafting, and methods of dividing a circle into segments and equal parts.

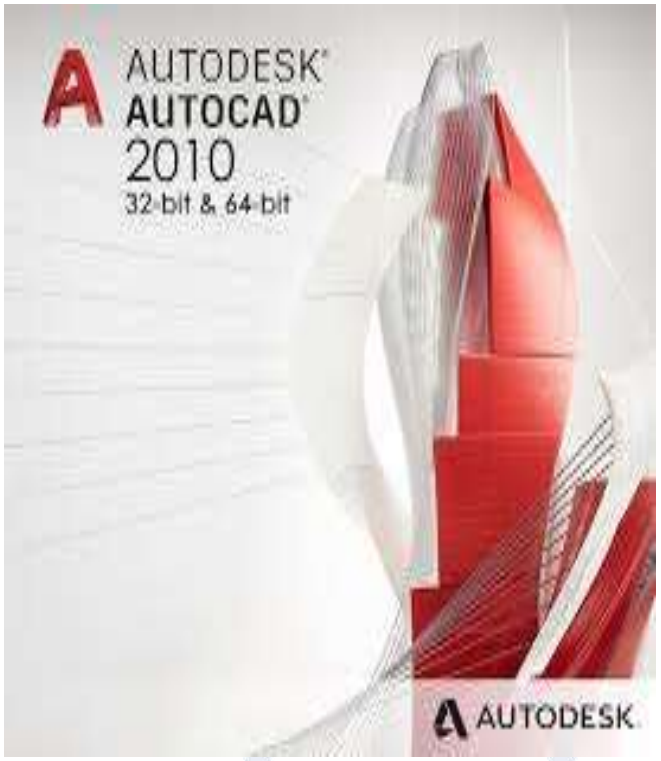
Nowadays, pedagogical staff are required not only to have deep knowledge in their field of expertise but also to acquire and teach modern information technologies to the younger generation—especially to school pupils and university students. Therefore, every professor and teacher working in general education schools, vocational colleges, and higher education institutions is expected to teach students how to use modern graphic software for computer-based tasks. Considering the current demands, teachers of engineering graphics must have at least basic knowledge of five modern graphic software programs and be able to use them to design primitive drawing elements on a computer. These include Photoshop, CorelDRAW, 3D MAX, AutoCAD, and Flash.

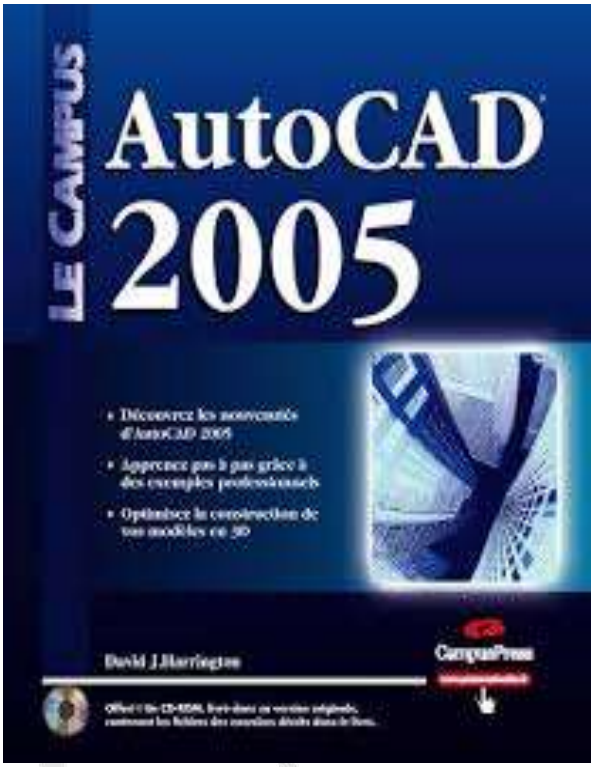
It is impossible to imagine the development of any modern electronic educational materials without the use of these software programs. Therefore, in order to create high-quality electronic learning resources, XXIst-century drafting teachers are required to have at least a basic understanding of the aforementioned graphic software tools.

To solve the issue we have set before us, we must first acknowledge that although the AutoCAD system was developed nearly 30 years ago, it remains one of the most popular graphic design programs and is considered the international standard for automated design today. AutoCAD is a comprehensive and widely used software that enables automated design work, capable of producing highly accurate and high-quality drawings and schematics of any type. Moreover, it guarantees that users can fully realize their creative potential.

For this reason, millions of design professionals, scientists, engineers, technicians, and students across more than 80 countries use the AutoCAD system in 18 different languages—it has become a common practice worldwide. Among today's modern software, AutoCAD stands out for being both powerful and user-friendly, allowing for precise and high-quality design processes. It also ensures users can make full use of their creative capabilities.

Therefore, the goal of this lesson is to introduce students to the possibilities of three-dimensional



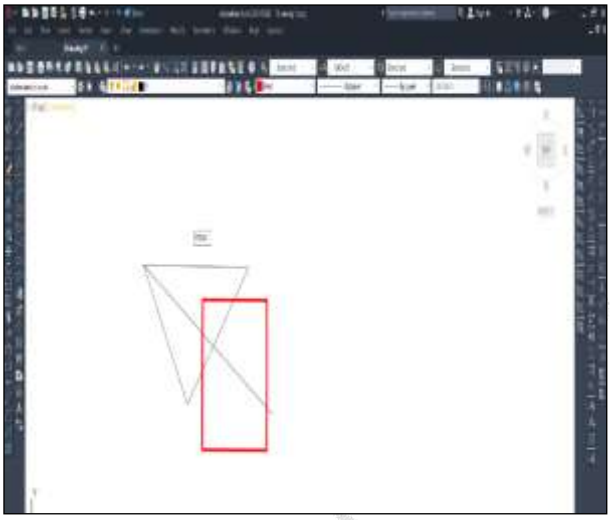


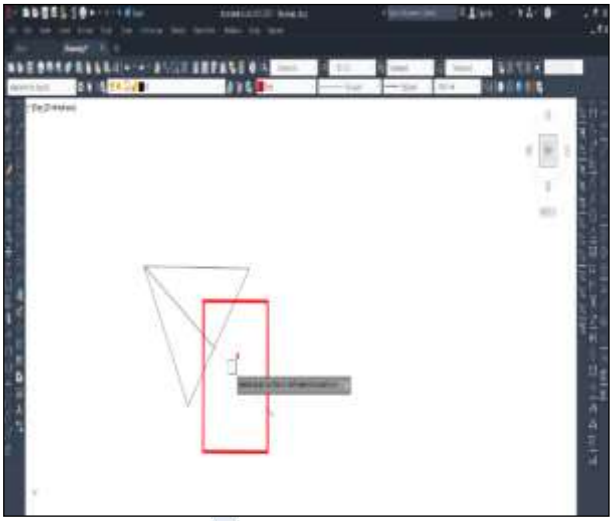
modeling of simple geometric objects using AutoCAD software and to teach them the algorithms for using its commands. Currently, the AutoCAD 2025 version has gained wide popularity. Compared to previous versions, it offers many advantages. In fact, new versions of this software are released every year by the American company Autodesk, each time with new features aimed at increasing work efficiency and productivity features are added.

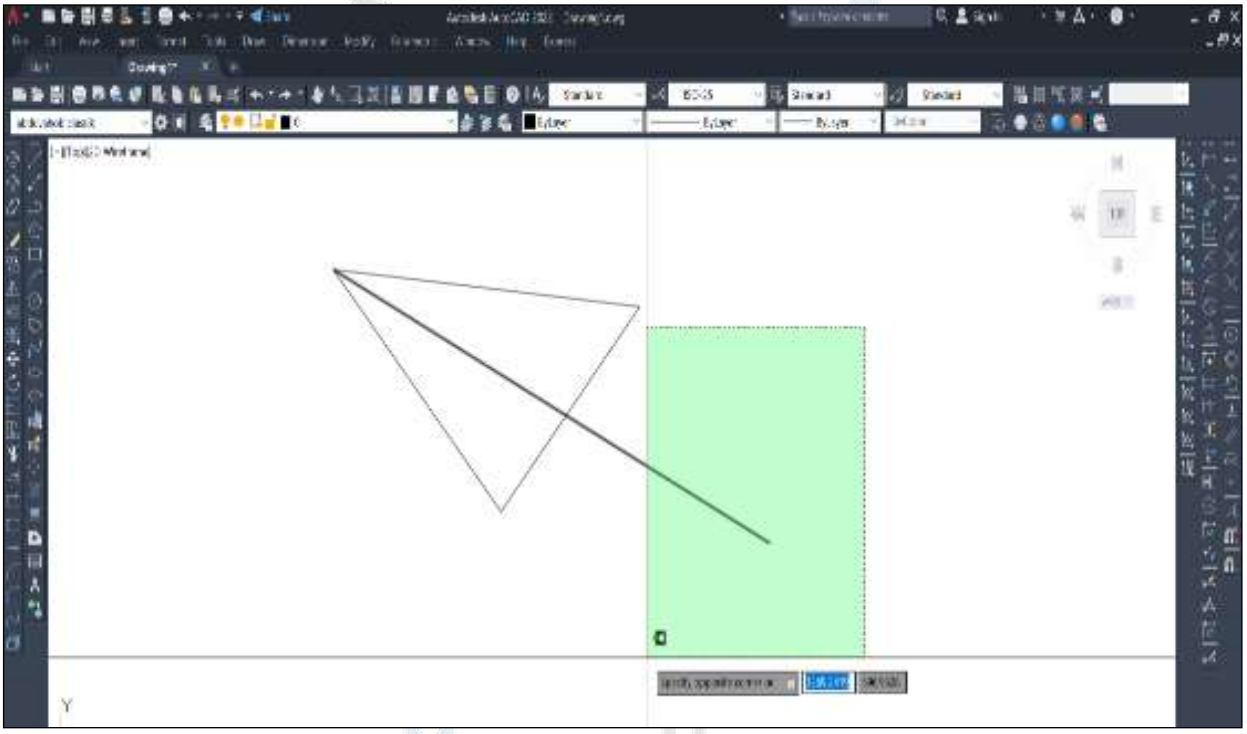
AutoCAD software offers many conveniences for drafting. For example, the paper does not get dirty, and drawings are created with 100% accuracy and perfection. Incorrect drawings can be easily edited by deleting any part, which prevents paper waste and saves time. In this application, wrong lines can be removed using the

"TRIM" command, or unnecessary parts can be selected and deleted using the"DELETE"key.

Here is another example: dividing a circle into equal parts. Doing this manually is not







particularly difficult, but achieving such accuracy by hand is impossible and the quality will not be good.

To perform this task, first, we open the AutoCAD software and start drawing.

STEPS:

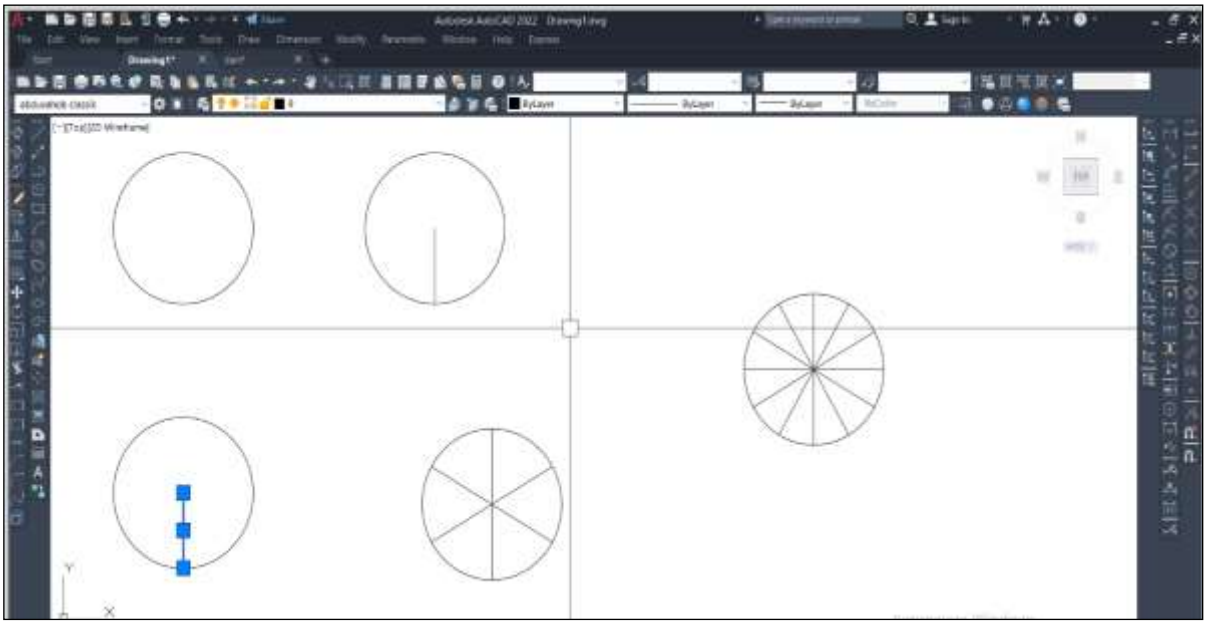
1. Enter the CIRCLE command and input the required radius.

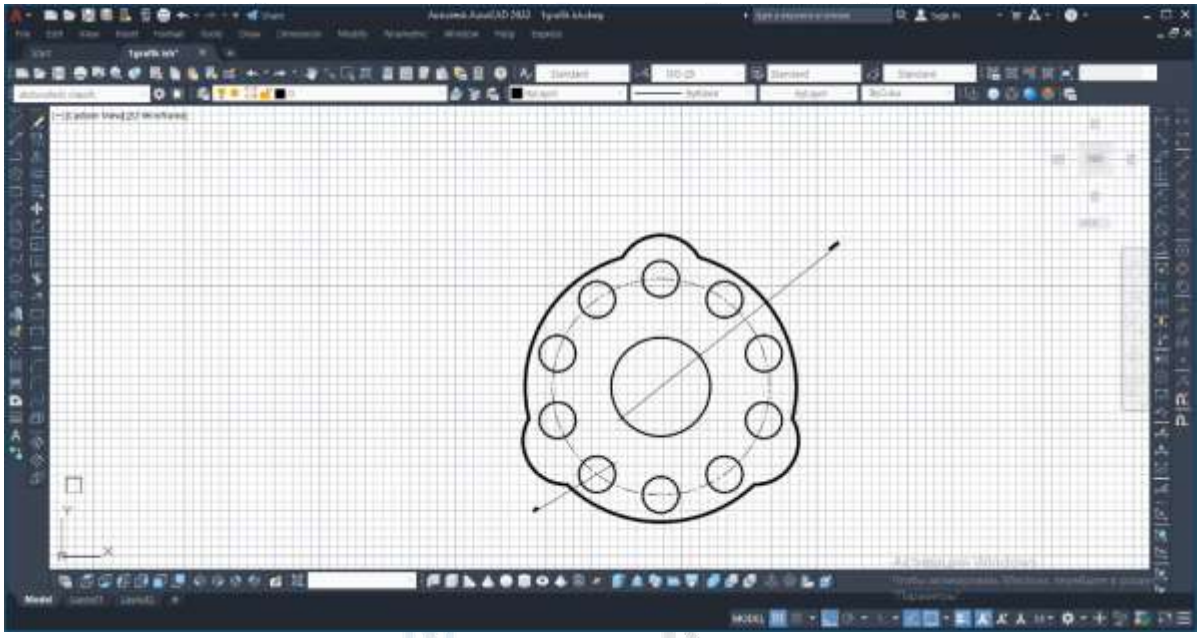
This will create the circle you need.

2. Draw a line from any point on the circle's circumference to its center.
3. Select this line.
4. Enter the ARRAYPOLAR command.
5. Click the left mouse button.

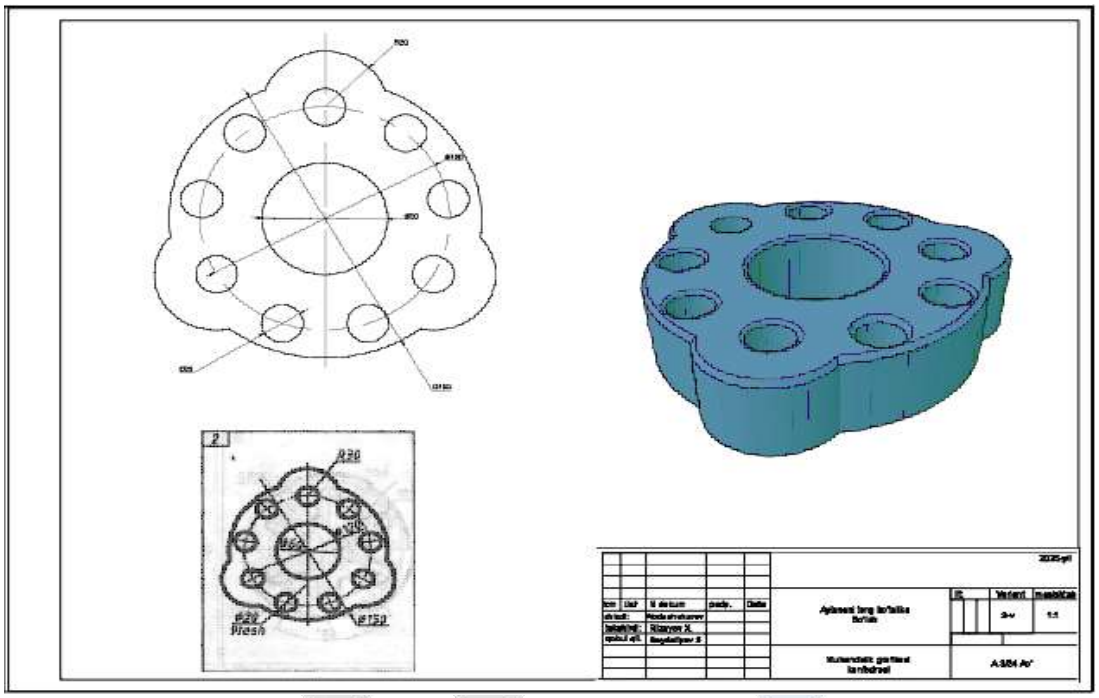
6. Enter the number of segments (lines) needed in the Items field.

As a result, you will get a circle divided into the required equal parts.
This image illustrates the sequence for dividing a circle into equal parts.





You can place it in the Layout and print it on paper of any format.
As you can also see, the circle can be divided into equal parts, its elements can be duplicated, and then it can be converted to a 3D view..



Used Literature

1. Rizayev.X, Toshpo‘latova.M “In 3ds Max Interior Lighting Design Software Options and Exterерni by Means of the Hd Media Card Options and the Benefits of Practical Importance”. Spanish Journal of Innovation and Integrity Volume:07,2022 http:/sjii.indexedresearch.or g.
2. 3DS MAX SOFTWARE CAPABILITIES AND INSTALLATION STEPS ON YOUR COMPUTER SYSTEM. Procedia of Theoretical and Applied Sciences *Volume 1, | August 2022 ISSN: 2795-5621 Available: http://procedia.online/index.ph p/applied/index*
3. Khaitov B. U. Lecture Notes on Computer Graphics. – Bukhara, 2014.
4. Rixsiboyev T. Computer Graphics. – Tashkent, 2006. – 168 pages.
5. Jalolovich Y. N., Shavkatovich A. A. Options for Performing the Detail Spread Applied in Drawing Using AutoCAD Graphics Software // International Engineering Journal For Research & Development. – 2020. – Vol. 5. – No. CONGRESS. – Pp. 3-3.