

SolidWorks dasturi va uning ish stoli interfeyslari bilan tanishish

Xusnidinova Nozima Ashurovna

Buxoro muhandislik texnologiya instituti mustaqil izlanuvchi doktoranti

E-mail: nozimaxusnidinova7@gmail.com

Annotatsiya: SolidWorks - bu muhandislar va dizaynerlarga keng ko'lamli muhandislik loyihalari uchun aniq 3D modellar va yig'ilishlarni yaratishga imkon beruvchi kuchli SAPR dasturi. Bu murakkab dizayn jarayonlarini soddalashtiradigan, mashinasozlik va dizayn sohasidagi professionallar va yangi boshlanuvchilar uchun qulay bo'lgan foydalanuvchilarga qulay interfeysga ega. SolidWorks eng so'nggi texnologiya va funksiyalarni o'z ichiga olishi uchun doimiy ravishda yangilanadi va uni o'rganish va muammolarni bartaraf etish uchun keng resurslar, o'quv qo'llanmalar va forumlar bilan ta'minlovchi mustahkam foydalanuvchilar va ishlab chiquvchilar hamjamiyati qo'llab-quvvatlaydi. Ta'lim mazmuniga o'yinga o'xshash elementlarni kiritish talabalarni murakkab muhandislik muammolarini echish yoki kompyuter grafikasini loyihalashda sinab ko'rish uchun peshqadamlar, nishonlar va darajalar yordamida motivatsiya va faollikni sezilarli darajada oshirishi mumkin.

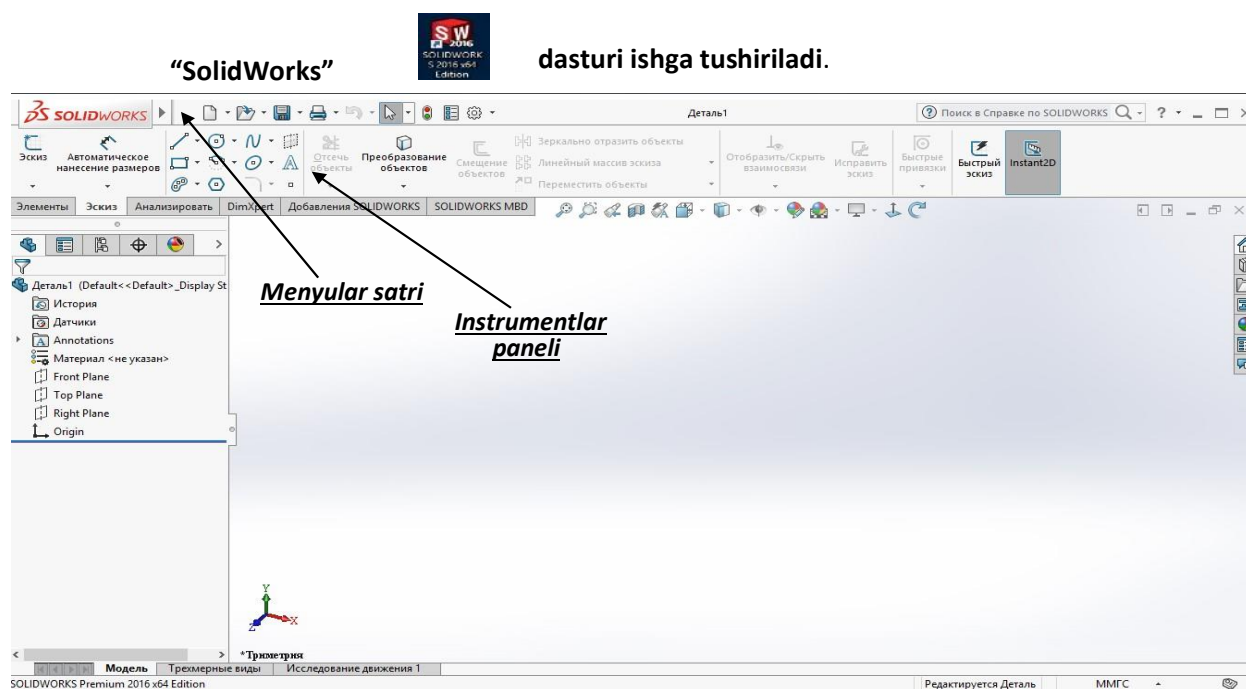
Kalit so'zlar. Solid Works, interfeys, ishchi dastur, instrument, ellipsis, splayn, obyekt o'q chiziq.

Abstract: SolidWorks is a powerful CAD software that allows engineers and designers to create accurate 3D models and assemblies for a wide range of engineering projects. has an interface. SolidWorks is constantly updated to include the latest technology and features, and is supported by a robust user and developer community that provides extensive resources, tutorials, and forums for learning and troubleshooting. Incorporating game-like elements into learning content can greatly increase motivation and engagement by using leaderboards, badges, and levels to challenge students to solve complex engineering problems or design computer graphics.

Key words. Solid Works, interface, working program, instrument, ellipse, spline, object line.

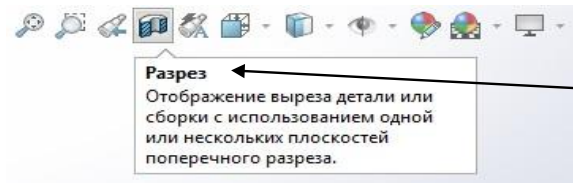
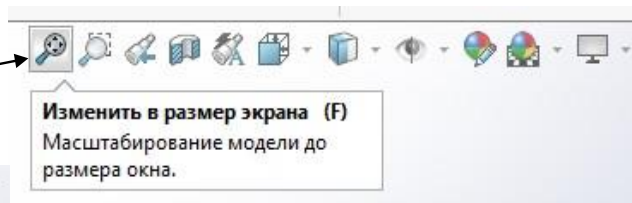
Аннотация: SolidWorks — мощное программное обеспечение САПР, которое позволяет инженерам и дизайнерам создавать точные 3D-модели и сборки для широкого спектра инженерных проектов. SolidWorks постоянно обновляется, включая новейшие технологии и функции, и поддерживается надежным сообществом пользователей и разработчиков, которое предоставляет обширные ресурсы, учебные пособия и форумы для обучения и устранения неполадок. Включение игровых элементов в учебный контент может значительно повысить мотивацию и вовлеченность за счет использования таблиц лидеров, значков и уровней, позволяющих учащимся решать сложные инженерные задачи или разрабатывать компьютерную графику.

Ключевые слова: Solid Works, интерфейс, рабочая программа, инструмент, эллипс, сплайн, линия объекта.



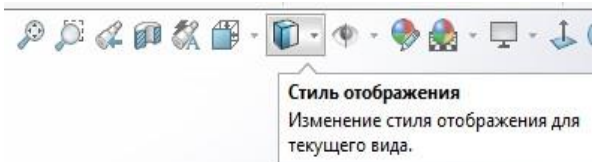
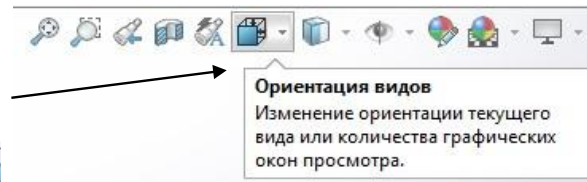
SolidWorks dasturi ish stoli

1. Ekran o'lchamini o'zgartirish
(ekranda ob'yekt ni to'liq ko'rsatish)

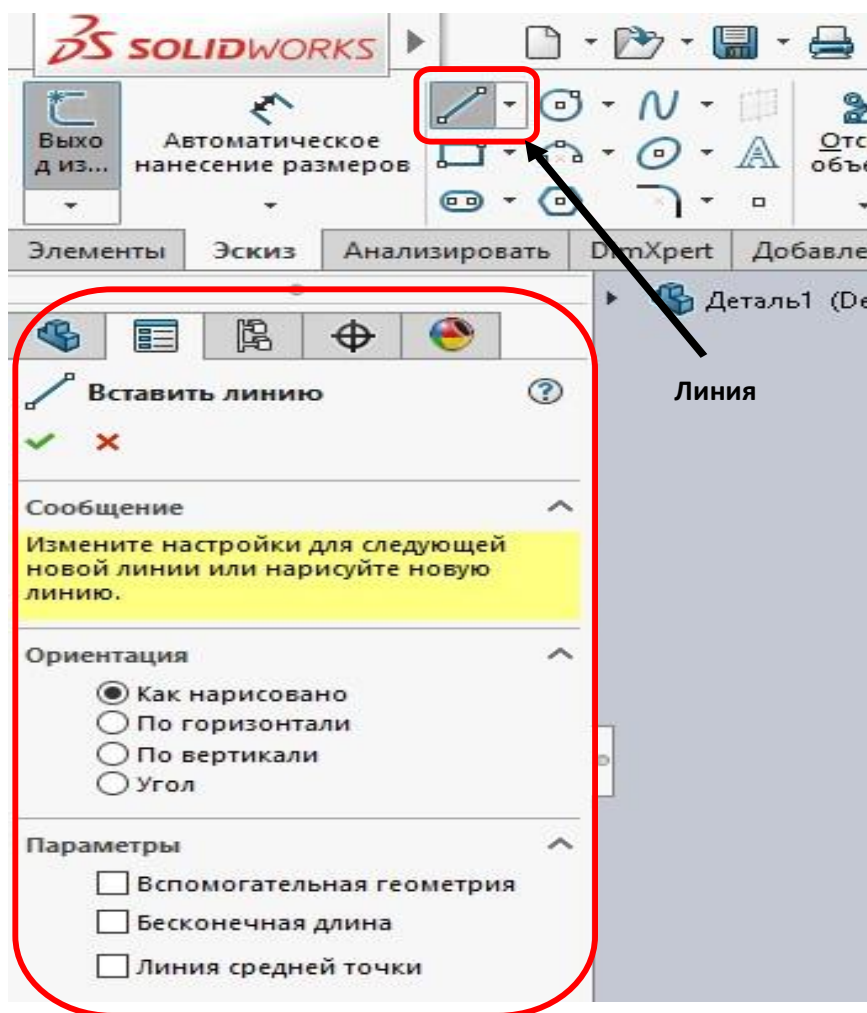


2. Detal yoki yig'ma birlikni xar xil tekisliklarda **qirqim** holatida ko'rsatish

3. Ekranni tekisliklar bo'yicha ko'rinishini tanlash



4. Detal yoki yig'ma birlikni ko'rinishini o'zgartirish



“SolidWorks” dasturi ish stolida ugmalardan birini tanlashdan oldin tekislik tanlab eskiz qismidan (masalan, **Линия** - tog'ri chiziq chizish) tanlaymiz.

Линия - tog'ri chiziq chizish tugmasini tanlashimiz bilan ish oynasining o'rta qismini chap tomonida axborot va ma'lumotlar paneli avtomat ravishda quyidagi **PropertyManager** (Менеджер свойства) ko'rinishga keladi:

Bu paneldagi **Ориентация** bolimida

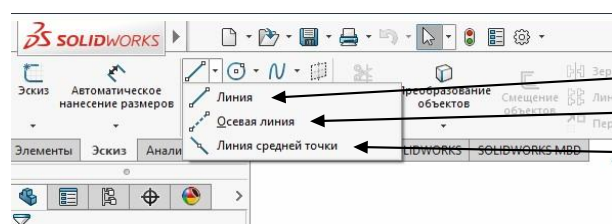
- **Как нарисовано**
- **По горизонтали**
- **По вертикали**
- **Угол**

buyruqlari mos ravishda chiziqni 2D tekisligi bo'yicha chizish amallarini bajaradi.

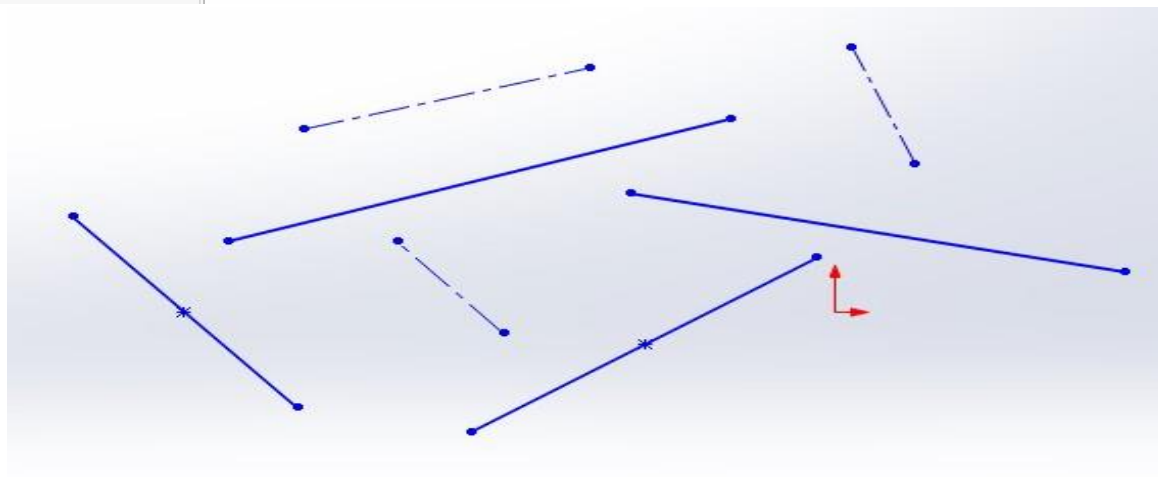
Параметры bolimida

- **Вспомогательная геометрия**
- **Бесконечная длина**
- **Линия средней точки**

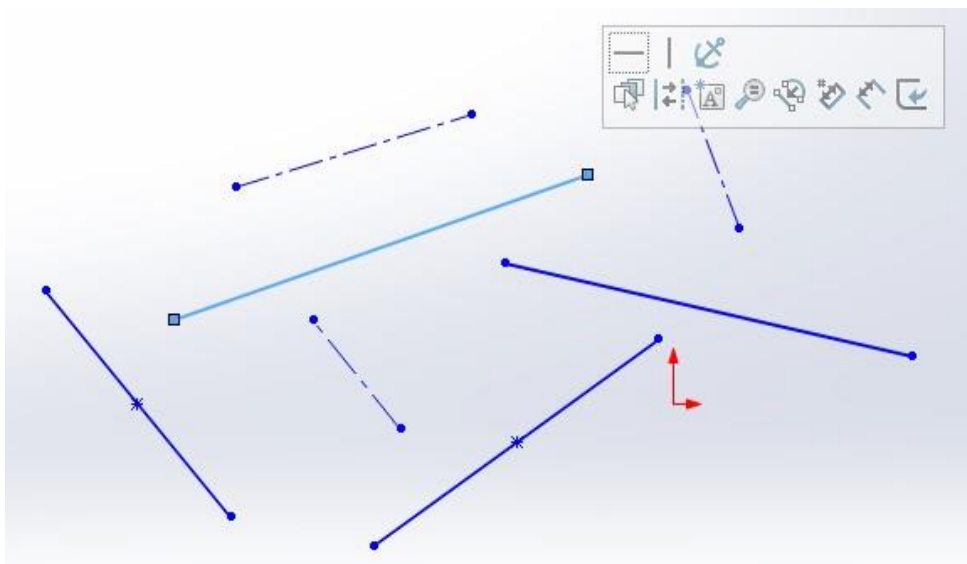
buyruqlari chiziq turlarini masalan, asosiy chiziqdan boshqa turdagi (o'q chiziqqa, cheksiz chiziqqa va nuqta bo'yicha 2 tomonga bir xil chiziq) chiziqqa aylantirib chizish imkonini beradi.



- Asosiy chiziq**
- O'q chiziq**
- Nuqta bo'yicha 2 tomonga bir xil chiziq**



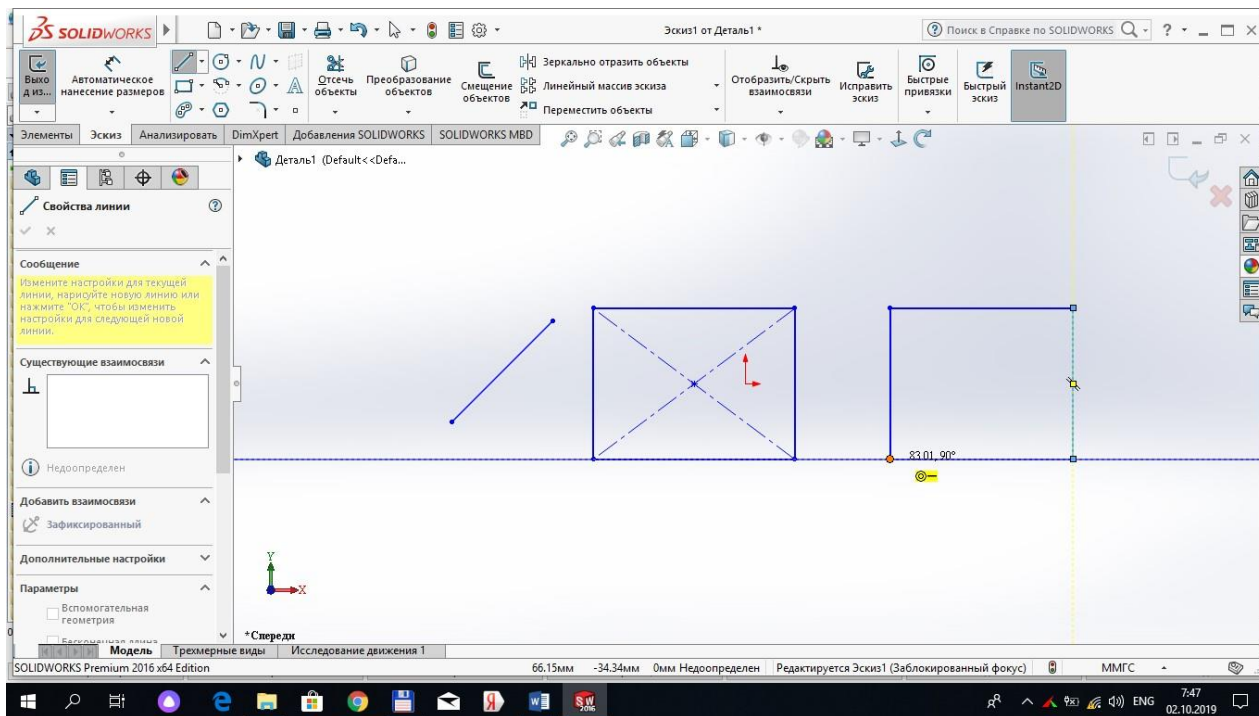
SolidWorks dasturida chiziq turlari



Chizilgan chiziqni tanlash bilan qo'shimcha yordamchi oyna ochiladi. Bu oynadagi tugmalar orqali chiziqni gorizontal, vertical holat bo'yicha tekislash mumkin. Chiziq turini o'zgartirish, chiziqni ekran bo'yicha to'liq ko'rish, o'lchamini birdan ko'rib borish va eskiz holatidan chiqish ishlarini bajarish mumkin.

Obyekt tushunchasi

“SolidWorks” dasturi bilan ishlashda ob'yekt tushunchasini to'g'ri aniqlab, tushunib olish lozim. Aytaylik **Instrumentlar panelidagi «Линия»** - To'g'ri chiziq chizish buyrug'i asosida bajarilgan shaklni dastur bitta ob'yekt deb qabul qiladi. Aynan shu shakl «**Прямоугольник**» - To'g'ri to'rtburchak chizish buyrug'i asosida bajarilsa dastur ushbu shaklni ham bitta ob'yekt deb qabul qiladi. «**Линия**» - To'g'ri chiziq chizish buyrug'i bilan to'g'ri to'rtburchak chizilsa to'rtta ob'yekt deb qabul qiladi. Chunki birinchi va ikkinchi usulda bitta buyruq bilan amal bajarildi, ikkinchi usulda esa to'rt marta to'g'ri chiziq chizish buyrug'i ketma – ket takrorlandi.



Obyekt va obyektlarni tanlash.

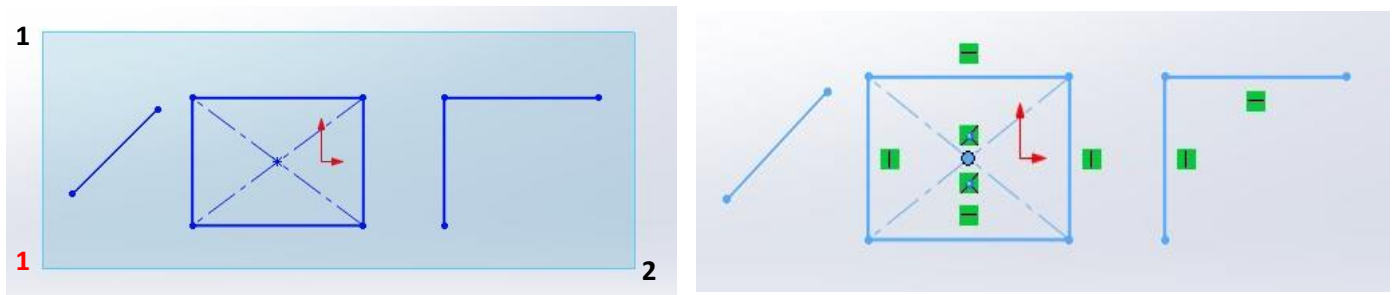
Obyektlarni tanlash odatda ularni tahrirlash uchun zarur.

Bitta obyekt tanlanishi uchun sichqoncha ko'rsatkichi obyekt chizig'i ustiga olib boriladi va sichqoncha chap tugmasi bosiladi.

Bir nechta ob'yektlarni baravariga tanlash uchun odatda dinamik ramkadan foydalaniladi. Dinamik ramka bu sichqoncha yordamida ob'yektlar guruxini to'g'ri to'rtburchak asosida tanlash demakdir. Buning uchun ob'yektlar perimetridan tashqi hududda sichqoncha chap tugmasi bosiladi va sichqoncha siljitib ko'k yoki yashil rangdagi to'g'ri to'rtburchak hosil qilinadi. Bunda ramka ob'jekt yoki ob'yektlarni o'z hududiga olishi kerak. Ob'jekt (ob'yektlar) to'g'ri to'rtburchak hududida joylashgandan so'ng yana sichqoncha chap tugmasi takroran bosiladi. Natijada ob'jekt (ob'yektlar) chiziq turi o'zgarib tanlanganligini bildiradi. **PropertyManager** panelida esa qaysi obyektlar belgilangani ko'rsatiladi.

Ko'k ramka – ob'yektlar guruxidan kerakli ob'yektlar to'plamini ajratib tanlash uchun qo'llanadi. Faqat o'z hududiga to'liq kirgan ob'ektlargina tanlanadi.

Bunday tanlashda sichqoncha ko'rsatkichi 1–nuqtadan 2–nuqtaga qarab yo'naltiriladi.



2

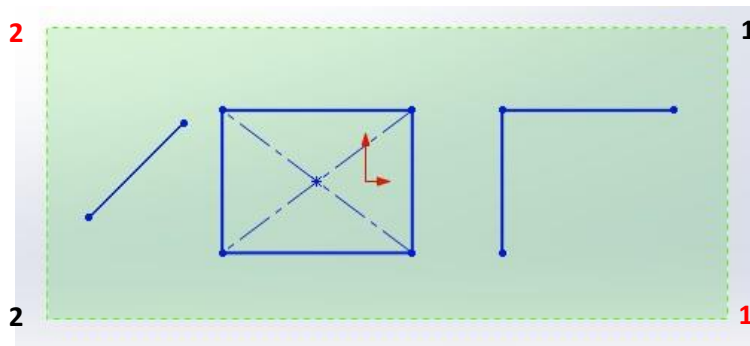
Ko'k ramka asosida ob'yektlarni tanlash.

Natija.

Yashil ramka – to'liq ob'yektlar majmuasini tanlashni nazarda tutadi. Bunda ob'yektning biron bir qismi ramka hududiga to'liq kirmagan bo'lsa ham ob'yekt (ob'yektlar) bari bir tanlanadi. Agarda ob'yekt (ob'yektlar) ramka hududidan to'liq tashqarida qolsa u holda ular tanlanmaydi.

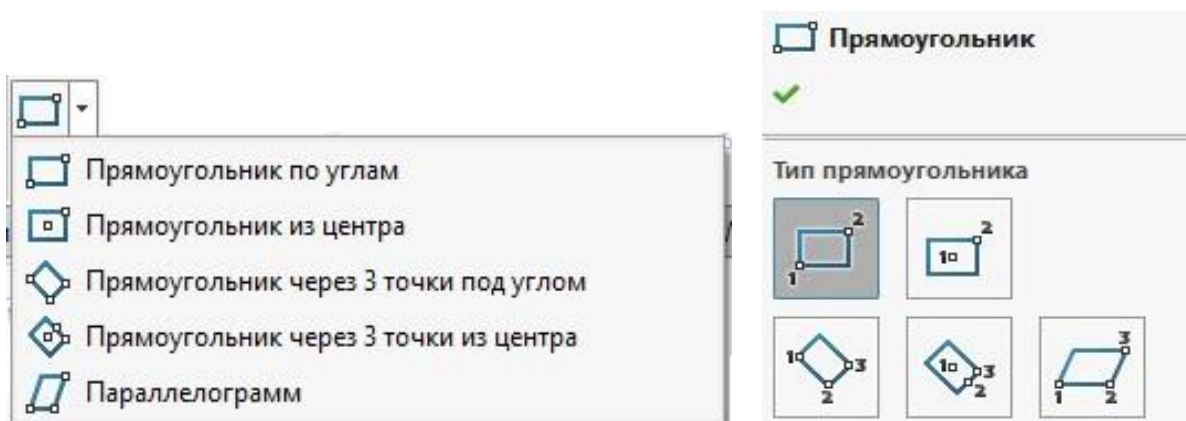
Sichqoncha harakati 1 – nuqtadan 2 – nuqtaga qarab

yo'naltiriladi.

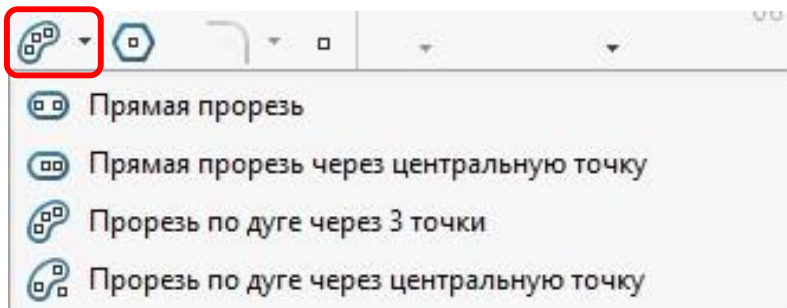


Yashil ramka asosida ob'yektlarni tanlash.

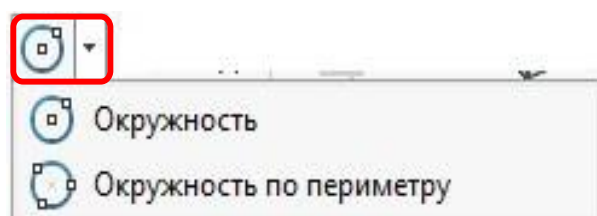
“To'rtburchak” chizish (o'ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud **to'rtburchak** chizish turlari ko'rsatiladi.



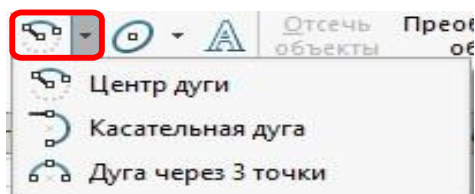
“To’rtburchak” chizish tugmasi. Bu tugmalarni tanlash orqali har xil turdagi to’rtburchaklar chizish mumkin.



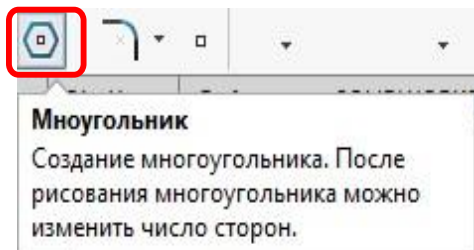
“Shponka uchun uyug” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud shponka uchun to’g’ri va yoysimon uyug chizish turlari ko’rsatiladi.



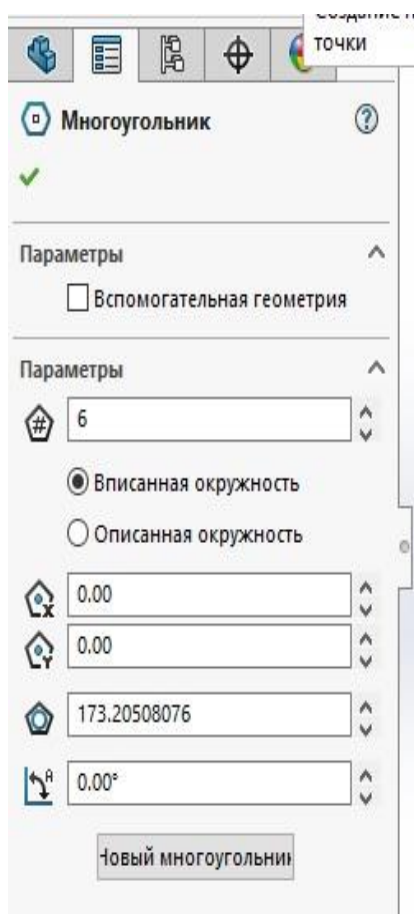
“Aylana” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud “Aylana” chizish turlari ko’rsatiladi.



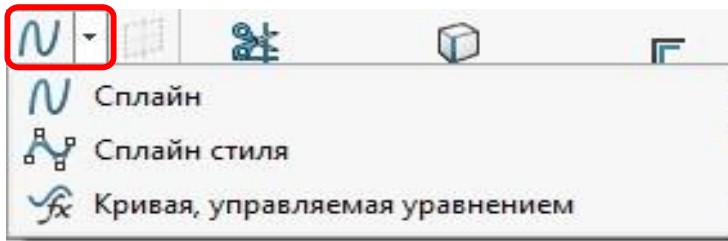
“Yoy” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud “Yoy” chizish turlari ko’rsatiladi.



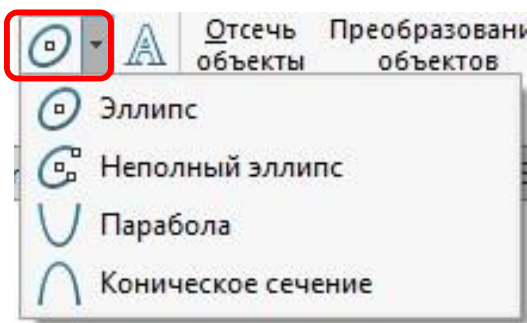
“Ko’pburchak” chizish tugmasi tanlanganda **PropertyManager** (Менеджер свойств) axborot oynasi ochilib quyidagi “Ko’pburchak” chizish uchun ma’lumotlar kiritish so’raladi.



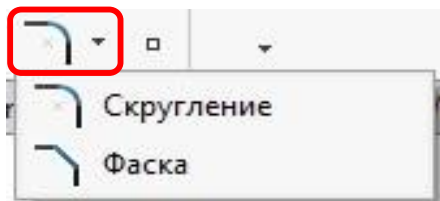
«Слайн» - Lekalo egri chiziqlar chizish tugmasi.



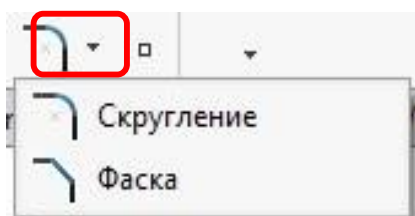
“**Splayn**” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud “**Splayn**” chizish turlari ko’rsatiladi. «Эллипс» - **Ellips** chizish tugmasi.



“**Ellips**” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud “**Ellips**” chizish turlari ko’rsatiladi.



“**Ellips**” chizish (o’ng tomonda pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib dastlabki mavjud “**Ellips**” chizish turlari ko’rsatiladi.



Ushbu «**Скругление**» tahrirlash buyrug’i kesma ob’yektlarini o’zaro faska asosida tutashtiradi.



“Ob’yektni kesib tashlash va qo’shish” tugmasi.



“Ob’yektni kesib tashlash” (pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib **“Ob’yektni kesib tashlash va qo’shish”** turlari ko’rsatiladi.

“Ob’yektni o’zgartirish” tugmasi.



“Ob’yektni o’zgartirish” (pastga qaragan strelka) tugmasi bosilganda uning ostida axborot oynasi ochilib **“Ob’yektni o’zgartirish”** turlari ko’rsatiladi.

Foydalanilgan adabiyotlar

1. Umedulayevna, S. S. (2023). Didactic Principles of Teaching Constructive Design Tasks in Drawing Lessons. *Miasto Przyszłości*, 35, 430-432.
2. Umedulayevna, S. S. (2023). Methods and Technologies for Using Constructive Design Issues in Drawing Lessons. *MiastoPrzyszłości*, 35,433-436.

3. Umidullayevna, S. S. (2023, May). THE USE OF STRUCTURAL DESIGN ISSUES IN THE ORGANIZATION OF THE DRAWING EDUCATIONAL PROCESS. In *Integration Conference on Integration of Pragmalinguistics, Functional Translation Studies and Language Teaching Processes* (pp. 244-247).
4. Laue S., Abdullaev S. S. Legends and True Stories about the Samanid Mausoleum //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – T. 2. – №. 2. – C. 308-311.
5. Abdullayev¹ S. F., Abdullayev S. S. TRANSLATION OF CULTURAL VALUES IN THE ARTISTIC HERITAGE OF TRADITIONAL APPLIED ARTS OF BUKHARA.
6. Абдуллаев С. С. РОЛЬ СРЕДНЕВЕКОВОЙ ЛИТЕРАТУРЫ ВОСТОКА В СОЗДАНИИ СЮЖЕТОВ МИНИАТЮРЫ СРЕДНЕЙ АЗИИ //Inter education & global study. – 2023. – №. 2. – C. 100-108.
7. Jurayevich J. K., Sayfullayevich A. S. THE UNIQUE OF BUKHARA JEWS IN THE DYE INDUSTRY AND WEAVING CRAFT //Euro-Asia Conferences. – 2021. – T. 1. – №. 1. – C. 48-53.
8. Sayfullayevich A. S. CHALLENGES OF TRAINING FINE ARTS TEACHERS IN THE PRESENT //International Conference on Research Identity, Value and Ethics. – 2023. – C. 348-353.
9. Abdullaev S., Mamatov D. Pedagogical foundations in the teaching of folk arts and crafts of Uzbekistan in the training of teachers of fine arts //E3S Web of Conferences. – EDP Sciences, 2023. – T. 420. – C. 10019.
10. Pirnazarov G. F., Mamurova F. I., Mamurova D. I. Calculation of Flat Ram by the Method of Displacement //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – T. 2. – №. 4. – C. 35-39.
11. Olimov S. S., Mamurova D. I. Directions For Improving Teaching Methods //Journal of Positive School Psychology. – 2022. – C. 9671–9678-9671–9678.
12. Aminov, A. S., Mamurova, D. I., & Shukurov, A. R. (2021, February). Additional and didactic game technologies on the topic of local appearance. In *E-Conference globe* (pp. 34-37).
13. Olimov S. S., Mamurova D. I. Information Technology in Education //Pioneer: Journal of Advanced Research and Scientific Progress. – 2022. – T. 1. – №. 1. – C. 17-22.
14. Mamurova D., Khusnidinova N. Didactic possibilities of using computer graphics programs in the educational process //BIO Web of Conferences. – EDP Sciences, 2024. – T. 84. – C. 02020.
15. Mamurova D. I., Ibatova N. I., Badiyeva D. M. The importance of using the keys-stadi innovative educational technology method in training the image module of geometric shapes //Scientific reports of Bukhara State University. – 2020. – T. 4. – №. 1. – C. 335-338.