|  |  |  |  |
| --- | --- | --- | --- |
| ***Škola:***  Obrtnička škola Požega | ***Predmet:***  Gospodarska matematika | | ***Broj sata:***  60. |
| ***Nastavnik:***  Ana Pavličić | ***Razred:***  1.h | | ***Datum:***  12.2.2016. |
| ***Nastavna cjelina: Koordinatni sustav u ravnini***  ***Nastavna jedinica: Ponavljanje gradiva***  ***Vrsta nastavnog sata:*** *ponavljanje i utvrđivanje* | | | |
| ***Ključni pojmovi:*** *koordinatni sustav, točka, koordinate, polovište, površina* | | | |
| ***Ishod nastavne jedinice:***  *Upotrijebiti naučenu metodu za ucrtavanje zadanih točaka u dani koordinatni sustav.*  ***Razina: primjena*** | | | |
| ***Očekivana obrazovna postignuća:***  Učenici će moći:   * **razlikovati** i **odrediti** apscisu i ordinatu dane točke * **zaključiti** u kojem kvadrantu se nalazi zadana točka * **očitavati** koordinate točaka u pravokutnom koordinatnom sustavu u ravnini * **crtati** točke zadane koordinatama u pravokutnom koordinatnom sustavu u ravnini * **izračunati** površinu trokuta, udaljenost između točaka i polovište dužine | | | |
|  | | | |
| **TIJEK NASTAVNOG SATA:**  **Uvodni dio sata:**  **5 min**  *Prije ulaska učenika u učionicu klupe označim brojevima redova i sjedala(stolica). Pri ulasku učenika u učionicu svakom učeniku podijelim ulaznicu. Učenici pronalaze mjesto na kojem će sjediti taj sat.*  *Primjer označavanja***(prilog1).**  *Pozdravljam učenike i goste, upisujem nastavnu jedinicu i izostanke.*  *Želim učenike zainteresirati zanimljivom pričom o koordinatnom sustavu koja sadrži povijesni aspekt*.  **4 min**  **Motivacija:**  *Video: „Matematički doprinos kućne muhe“*  ***2 min***  *Kratko komentiram s učenicima video.*  *Asocijacije – što je još napravljeno po istom principu po kojem je Descartes opisivao položaj muhe na stropu?*  *-zemljopisne karte,*  *-potapanje brodova,*  *-šah,*  *-različiti dijagrami,…*  **Središnji dio sata:**  **1 min**  *Najavljujem aktivnost koja slijedi. Dajem upute za rješavanje i pišem na ploči potrebne formule za nastavni listić*.  **15 min**  **Aktivnost„Interaktivni ispit znanja“**  *Učenici će u paru rješavati 7 zadataka, imat će za to određeno vrijeme kako bi smo vidjeli koliko je tko uspio riješiti u zadanom roku. Zadaci se neće ocjenjivati, ali ako je netko jako brzo riješio može biti nagrađen.*  *Zadatke s nastavnog listića vidi u* **(prilogu2).**  *Koristeći dosadašnja znanja i formule učenici rješavaju zadatke. Svakom paru učenika prilazim i gledam kako napreduju sa zadacima. Pisanje postupaka u bilježnicu omogućit će im lakše uvježbavanje i svladavanje gradiva. Ukoliko neki par učenika smatra da je završio s zadacima, donosim im rješenja kako bi provjerili ono što su dobili. Ukoliko je potrebno učenici zadatke rješavaju i na ploči.*  **13 min**  **Aktivnost „Crtež u koordinatnoj ravnini“**  *Organiziram malo „natjecanje“ koje bi se sastojalo u sljedećem: Učenik ispisuje niz točaka koje, nakon ucrtavanja u koordinatnom sustavu i uzastopnim povezivanjem dužinama, daju crtež izvjesnog**lika. Broj zadanih točaka ograničen je na neki razuman broj. Učenike treba upozoriti da crtež smije sadržavati isključivo točke i njihove spojnice dužinama. Jedino bi se, zbog poboljšanja estetskog dojma, moglo dopustiti bojenje crteža. Naravno, ako za to bude vremena. Na ploči kratko demonstriram kako ucrtati prvu točku.*  *Dijelim zadatke i nastavne listiće, učenici kreću s aktivnošću…*  *Zadatke s nastavnog listića vidi u* **(prilogu3).**  *Šećem po razredu, usmjeravam učenike ako ne znaju krenuti sa zadatkom i ako trebaju pomoć.*  **Završni dio sata:**  **5 min**  *ZADAVANJE DOMAĆE ZADAĆE (zadaci i upute za samostalni rad):*  Podijeliti učenicima nastavne listiće i zadatke za zadaću**(prilog4)**.  *VREDNOVANJE- budući da će učenici individualno raditi, pratit ću njihovo zalaganje. Ukoliko primijetim da je netko od učenika posebno aktivan i sudjeluje nagradit ću ga ocjenom ili ću ga pohvaliti pred razredom.* | | ***Oblici rada:***   * frontalni rad * individualni rad * rad u paru | |
| ***Nastavne metode:***   * vizualna metoda * istraživanje   (asocijacije, promatranje, praćenje)   * problemsko poučavanje   (rad na zadacima)   * heurističko poučavanje   (otkrivanje, zaključivanje) | |
| ***Nastavna sredstva i pomagala:***   * bilježnica * ploča * kreda * nastavni listići * projektor * računalo | |
| ***Domaća zadaća:***  Za domaću zadaću pokušati kreirati nove likove. | |
| ***Napomena:***  *Poveznica za video:*  [*http://www.amara.org/en/videos/S3EyY9i8r3LT/info/descartes-story-3/*](http://www.amara.org/en/videos/S3EyY9i8r3LT/info/descartes-story-3/)  *Sadržaj priče:*  [*Matematički doprinos obične kućne muhe*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)*.* [*Gdje ti voliš razmišljati?Možda ti nije važno gdje se nalaziš kad najbolje razmišljaš.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Ovo je priča o nekome tko je najbolje razmišljao ležeći u krevetu.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Ime ovog mladog francuza bilo je Rene.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Kako je kao dijete bio često bolestan, bilo mu je dozvoljeno ostajati dugo u krevetu, nekada čak i do podneva.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*No nije sve to vrijeme proveo spavajući.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Nešto od tog vremena proveo je razmišljajući i učeći.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Razmišljao je o mnogim*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*stvarima ali najviše je volio misliti*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*o matematici, znanosti i filozofiji.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Prema priči, jednoga je dana*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Rene ležao u krevetu razmišljajući kad je primijetio muhu*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*kako hoda po stropu. Dok ju je promatrao kako se pomiče po stropu*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*prekrivenom kvadratnim pločicama razmišljao je kako*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*bi mogao opisati položaj te muhe.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*S obzirom da je bio matematičar, razmišljao je kako*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*bi precizno mogao iskazati položaj muhe na zidu koristeći brojeve.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Mogao je reći nešto poput „Muha se nalazi dvije stope od lijevog zida.“ - no to mu nije govorilo*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*koliko*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*je muha udaljena od prednjeg ili stražnjeg zida.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Stoga, ako je želio koristiti brojeve kako bi odredio položaj muhe morao je imati dva broja.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Jednim brojem opisao bi horizontalni položaj, a drugi broj vertikalni položaj.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Nastavljajući promatrati muhu*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*mislio je da bi umjesto korištenja neke mjere za brojeve*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*možda trebao iskoristiti kvadratne pločice kao pomoć.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Napokon, mjerenje je podrazumijevalo da se mora ustati iz kreveta, a on to nije želio učiniti.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Odjednom mu se javila ideja.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Ako odredi jedan kut stropa kao početnu točku*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*može opisati položaj muhe tvrdeći se nalazi četiri pločice duž te šest pločica gore.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Prvi broj bi uvijek predstavljao horizontalnu pločicu, a drugi broj vertikalnu pločicu.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Koristeći ovaj uređeni par brojeva*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*pronašao je način da jednostavno odredi položaj muhe bez obzira gdje se ona nalazila na stropu.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Rene Descartesova ideja kreirala je ono što mi danas poznajemo kao koordinatni sustav u ravnini.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Često se njemu u čast naziva Kartezijev koordinatni sustav.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Smatra se da je bio jedan od najvećih mislioca svih vremena.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Najbolje je poznat po svojoj izjavi: Mislim, stoga postojim.Tijekom života nastavio je ostajati dokasna u krevetu razmišljajući i radeći.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Nedugo prije svoje smrti poučavao je*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*švedsku kraljicu Christinu.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Tada se morao ustati iz kreveta izuzetno rano.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Neki kažu da je takvo uskraćivanje sna dovelo i do njegove bolesti.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Umro je od upale pluća s 53 godine nakon što je uspio uvelike pridonijeti matematici i filozofiji.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*Stoga sljedeći puta kada vidiš muhu na stropu*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)[*ili odlučiš dugo spavati, prisjeti se Renea Descartesa.*](http://www.amara.org/embedder-widget-iframe/noanalytics/?data=%7B%22hideSubtitleMe%22%3A%22true%22%2C%22hideLogo%22%3A%22true%22%2C%22height%22%3A%22370px%22%2C%22width%22%3A%22620px%22%2C%22url%22%3A%22http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3SNmdNO5Bb4%22%2C%22showSubtitlesDefault%22%3A%22true%22%2C%22noanalytics%22%3A%22true%22%7D)  **Plan ploče:**  Površina trokuta:  Udaljenost između točaka:  Polovište: | | | |

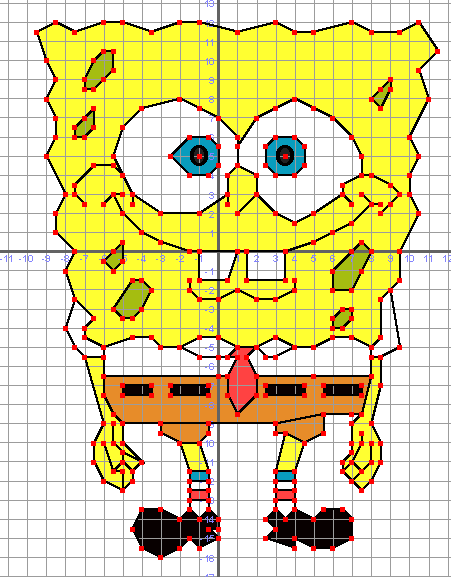
Prilog1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Red: 1  Stolica: 1 | Red: 1  Stolica: 2 | Red: 1  Stolica: 3 | Red: 1  Stolica: 4 | Red: 1  Stolica: 5 |
| Red: 1  Stolica: 6 | Red: 1  Stolica: 7 | Red: 1  Stolica: 8 | Red: 2  Stolica: 1 | Red: 2  Stolica: 2 |
| Red: 2  Stolica: 3 | Red: 2  Stolica: 4 | Red: 2  Stolica: 5 | Red: 2  Stolica: 6 | Red: 2  Stolica: 7 |
| Red: 2  Stolica: 8 | Red: 3  Stolica: 1 | Red: 3  Stolica: 2 | Red: 3  Stolica: 3 | Red: 3  Stolica: 4 |
| Red: 3  Stolica: 5 | Red: 3  Stolica: 6 | Red:  Stolica: | Red:  Stolica: | Red:  Stolica: |

Prilog2

**ABCD pitalice (***primjeri zadataka s državne mature***):**

1. Apscisa točke je broj:

****A)

B)

C)

D)

1. Ordinata točke je broj:

A)

B)

C)

D)

1. U kojem kvadrantu se nalazi točka :

A) I.

B) II.

C) III.

D) IV.

1. U kojem kvadrantu se nalazi točka :

A) I.

B) II.

C) III.

D) IV.

1. Udaljenost točaka i u ravnini iznosi:

A)

B)

C)

D)

1. Površina trokuta čiji su vrhovi , i iznosi:

A)

B)

C)

D)

1. Polovište dužine s rubnim točkama i je točka:

A)

B)

C)

D)

Rješenja: 1. C) , 2. A) , 3. B) , 4. C) , 5. B) , 6. A) i 7. D) .

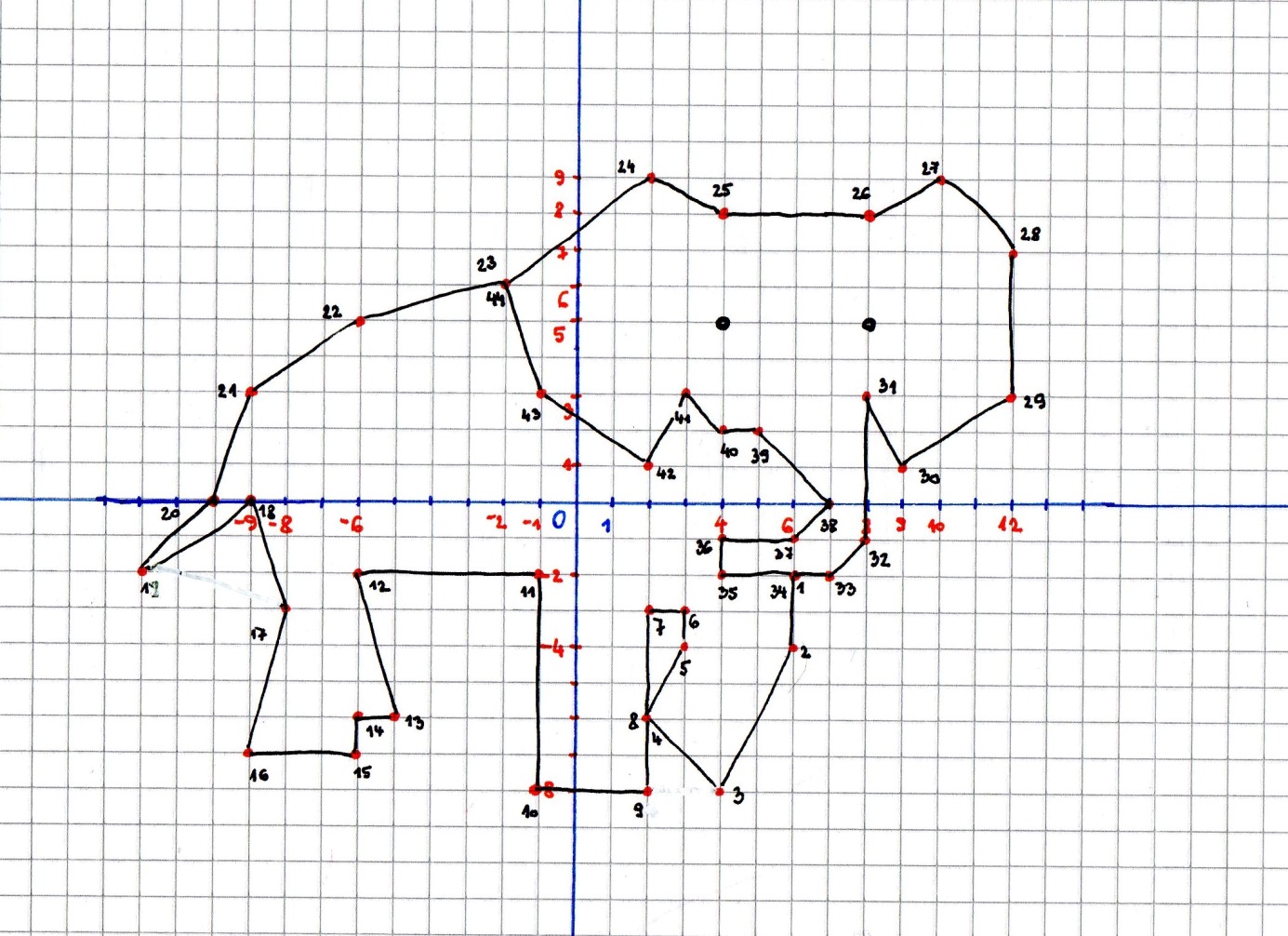
Prilog3

Zadatak :

Nakon ucrtavanja točaka u koordinatni sustav spoji brojeve od najmanjeg prema najvećem:

Izolirane točke:

Rješenje:



Prilog4

Zadatak za domaću zadaću:

Nakon ucrtavanja točaka u koordinatni sustav spoji brojeve od najmanjeg prema najvećem:

Rješenje:

