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KPE PLATFORM – REALIZATION – ENGINEERING GRAPHICS TESTS PART 1

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Facing the current lack of an adequate base of examples for self-solving and the lack of independent progress verification by the students in reading and writing geometric drawing of 3D elements, the authors have decided to prepare open source materials designed to assist students. As part of the proposed KPE platform, theoretical content will be combined with examples and tasks for self-solving. Electronic media allow integration of different content. There are various theoretical and task studies such as [2,3], but these are generally textbooks, which combine theoretical content with practical solutions and it requires the use of at least two books. There are no solutions of all tasks, which does not allow to test one's own skills.

Another aspect is the preparation of materials for self-study in a way that the content of the presentation is attractive to young people. Therefore, in the era of omnipresent smartphones, tablets and laptops the authors concluded that preparation of such materials must make it possible to be available on modern media, but at the same time to be able to prepare it in a paper form. The traditional method i.e. a sheet of paper and a pencil, where one can draw something on one's own or add a comment is still valid and often used.

Applications for mobile devices [1] require a change in the presentation of content.

Therefore, depending on needs and abilities, the authors offer different methods of transfer. This follows from observing the behavior of young people and their aversion to the written word and preference of image, and in particular film. As in the past also at present youth likes competition manifested in solving different types of quizzes or tests that give an opportunity to compare results with others.

At the beginning the tests for reading geometric form and recording information on 3D objects by means of engineering methods have been elaborated.

The assumption that the portal was adapted to a variety of devices - smartphones, tablets, computers - required additional effort. It gives a greater chance that young people will be willing to use this website. The authors assumed that developed issues will be divided into five parts:

theoretical part - containing all the necessary theoretical knowledge,
 informative part - containing the contents of the task and help
 example part - comprising one to several examples solved,
 checking part – random examples for self-solving,
 key part

Due to the possibility of using the portal by a variety of devices, from the beginning it had to be arranged in a way that each task can be uploaded by a user in a similar way, despite the different proportions of screens and their resolutions. This forced the creators to adopt a scaled model of the page, so that all the examples fit on the screen in full version and at the same time all the answers are always visible (Figure 1).

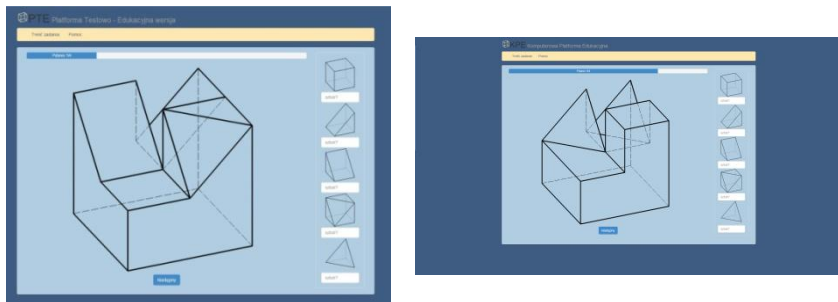


Fig. 1 Test screen with an exemplary task

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