

Views About Mathematics Survey

Form M12

This survey is designed by the Modeling Instruction and ACEPT research teams at Arizona State University. It is intended to identify factors that affect people's understanding of mathematics, and to assist in the design of instructional material.

*Your participation is **voluntary**. The results will not affect your grade, even if you choose not to participate. All data are **confidential**. Your identity will not be disclosed to any party. Return of the survey materials will be considered your consent to participate.*

If you have any question about this survey, please call:

Dr. Ibrahim Halloun at (602) 965-8528, or Dr. Marilyn Carlson at (602) 965-3480.

Please:

*Do **not** write anything on this questionnaire.*

Mark your answers on the computer sheet.

*Use a **No. 2 pencil** only, and follow marking instructions on the computer sheet.*

*Make **only one** mark per item.*

*Do **not** skip any question.*

*Avoid guessing. Your answers should reflect what **you** actually and honestly think.*

Plan to finish the survey in 30 minutes.

The example below illustrates the eight choices that you have for answering questions 1 through 33 in this section. Please mark your answers to these questions in section III of the VASS Answer Sheet.

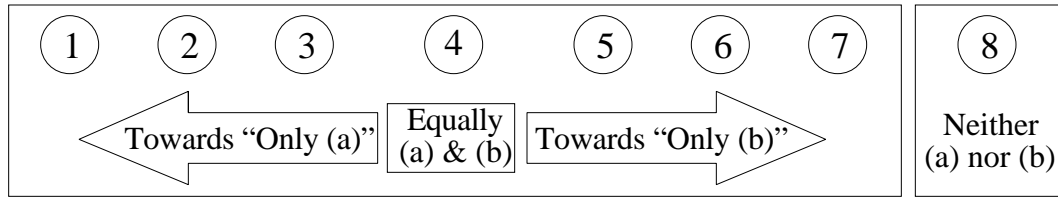
Example

Learning mathematics requires:

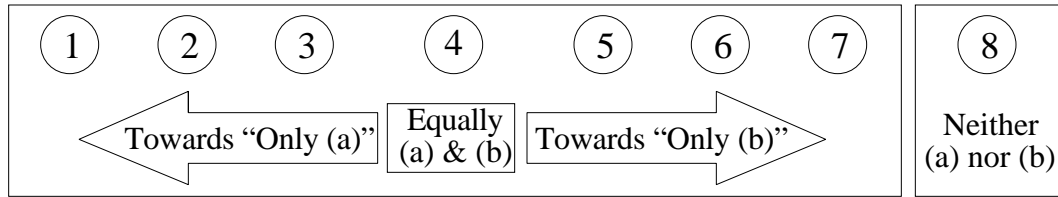
- (a) a serious effort.
- (b) a special talent.

What would each one of the eight choices mean?

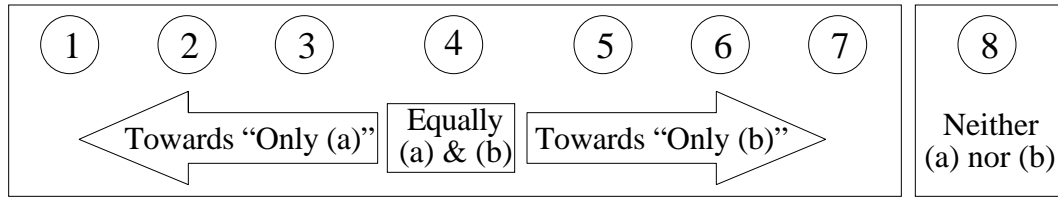
- ① Only (a), Never (b): Learning mathematics requires **only** a serious effort and **no** special talent *at all*.
- ② Mostly (a), Rarely (b): Learning mathematics requires **far more** a serious effort than a special talent.
- ③ More (a) Than (b): Learning mathematics requires **somewhat more** a serious effort than a special talent.
- ④ Equally (a) & (b): Learning mathematics **equally** requires **both** a serious effort and a special talent.
- ⑤ More (b) Than (a): Learning mathematics requires **somewhat more** a special talent than a serious effort.
- ⑥ Mostly (b), Rarely (a): Learning mathematics requires **far more** a special talent than a serious effort.
- ⑦ Only (b), Never (a): Learning mathematics requires **only** a special talent and no serious effort *at all*.
- ⑧ Neither (a) Nor (b): Learning mathematics requires **neither** a special talent **nor** a serious effort.



1. Learning mathematics requires:
 - (a) a serious effort.
 - (b) a special talent.
2. If I had a choice:
 - (a) I would never take any mathematics course.
 - (b) I would still take mathematics for my own benefit.
3. Reasoning skills that are taught in mathematics courses can be helpful to me:
 - (a) in my everyday life.
 - (b) if I were to major in mathematics or a related field.
4. I study mathematics:
 - (a) to satisfy course requirements.
 - (b) to learn useful knowledge.
5. My score on mathematics exams is a measure of how well:
 - (a) I understand the covered material.
 - (b) I can do things the way they are done by the teacher or in some course materials.
6. For me, doing well in mathematics courses depends on:
 - (a) how much effort I put into studying.
 - (b) how well the teacher explains things in class.
7. When I experience a difficulty while studying mathematics:
 - (a) I immediately seek help, or give up trying.
 - (b) I try hard to figure it out on my own.
8. When studying mathematics in a textbook or in course materials:
 - (a) I find the important information and memorize it the way it is presented.
 - (b) I organize the material in my own way so that I can understand it.
9. For me, the relationship of mathematics courses to everyday life is usually:
 - (a) easy to recognize.
 - (b) hard to recognize.
10. In mathematics, it is important for me to:
 - (a) memorize technical terms and mathematical formulas.
 - (b) learn ways to organize information and use it.
11. Mathematical formulas:
 - (a) express meaningful relationships among variables.
 - (b) provide ways to get numerical answers to problems.



12. After I go through a mathematics text or course materials and feel that I understand them:
 - (a) I can solve related problems on my own.
 - (b) I have difficulty solving related problems.
13. The first thing I do when solving a real world problem that involves mathematics is:
 - (a) represent the situation with sketches and drawings.
 - (b) search for formulas that relate givens to unknowns.
14. In order to solve a mathematics problem, I need to:
 - (a) have seen the solution to a similar problem before.
 - (b) apply general problem solving techniques.
15. For me, solving a mathematics problem more than one way:
 - (a) is a waste of time.
 - (b) helps develop my reasoning skills.
16. After I have answered all questions in a homework mathematics problem:
 - (a) I stop working on the problem.
 - (b) I check my answers and the way I obtained them.
17. After the teacher solves a mathematics problem for which I got a wrong solution:
 - (a) I discard my solution and learn the one presented by the teacher.
 - (b) I try to figure out how the teacher's solution differs from mine.
18. How well I do on mathematics exams depends on how well I can:
 - (a) recall material in the way it was presented in class.
 - (b) do tasks that are somewhat different from ones I have seen before.
19. In order to prove a mathematical theorem one must:
 - (a) produce evidence from the physical world.
 - (b) provide a logically sound argument.
20. When they represent relationships in the physical world, mathematical functions are:
 - (a) exact expressions of what is being represented.
 - (b) approximate expressions of what is being represented.
21. After a theorem has been proven and accepted in mathematics:
 - (a) it will never be changed.
 - (b) it may be rejected at a future time.
22. The relationship among the sides of a right triangle expressed in the Pythagorean theorem is true because it has been:
 - (a) proven by a logical argument.
 - (b) verified by measurement.



23. Collecting and graphing real world data is useful for:
 - (a) determining patterns and making general predictions.
 - (b) obtaining numerical answers to specific problems.
24. For me, making unsuccessful attempts when solving a mathematics problem is:
 - (a) a natural part of my pursuit of a solution to the problem.
 - (b) an indication of my incompetence in mathematics.
25. When solving a challenging mathematics problem, a mathematician:
 - (a) makes many incorrect attempts.
 - (b) moves directly to a correct solution.
26. If we want to apply a method used for solving one mathematics problem to another problem, the objects involved in the two problems must be:
 - (a) identical in all respects.
 - (b) similar in some respects.
27. Different branches of mathematics, like geometry and algebra:
 - (a) are related by common principles.
 - (b) have no relationship to one another.
28. Scientists use mathematics as:
 - (a) a tool for analyzing and communicating their ideas.
 - (b) a source of factual knowledge about the natural world.
29. For me, solving a problem that involves mathematical reasoning is:
 - (a) an enjoyable experience.
 - (b) a frustrating experience.
30. Graphing calculators and computers:
 - (a) bring new methods for solving mathematics problems.
 - (b) speed up problem solving using established methods.
31. Using graphing calculators or computers:
 - (a) increases my interest in studying mathematics.
 - (b) is a waste of time.
32. In solving mathematics problems, graphing calculators or computers help me:
 - (a) understand the underlying mathematical ideas.
 - (b) obtain numerical answers to problems.
33. I answered all the questions in the survey:
 - (a) to the best of my ability.
 - (b) without thinking seriously about them.