

H.E.S. ACT In 1 Day Math Strategies and Sequence

60 Questions in 60 minutes (≤ 1 minute per question)

Highlighting Explanation - Yellow highlight: strategies. Blue highlight: examples. Green highlight: process.

Instructions for the Math Test - Note: We will quickly review this in the final lesson.

1. Memorize the instructions beforehand:
 - a. After solving each problem, pick the **correct** answer from the five given and fill in the corresponding oval on your answer sheet.
 - b. Solve as many problems as you can in the time allowed. **Do not worry over problems that take too much time; skip them** if necessary and return to them if you have time.
 - c. Calculator use is permitted on the test. Calculators can be used for any problem on the test, though **calculators may be more harm than help for some questions**.
 - d. **Note:** unless otherwise stated on the test, you should assume that
 - i. Figures accompanying questions **are not drawn to scale**. * But they're close.
 - ii. **Geometric figures exist in a plane**.
 - iii. When given in a question, **"line" refers to a straight line**.
 - iv. When given in a question, **"average" refers to the arithmetic mean ($2+3+1=6$ $6/3=2$)** **

* But they are mostly to scale, which can help you guess.

** Review the math terms before the test -- quick and easy.--

The Format of the Math Test

1. Unlike the other sections, which ask for the best answer, the Math Test asks for the **correct** answer.
2. The test document offers **room for "your figuring."** Use it.
3. The Math Test has **five, not four,** multiple choice answers.
 - a. **If you are answering choices D or J, don't automatically fill in the last bubble in the row.**
 - b. **Subvocalize** your answer, specifically.

Question Types: Basic Problems and Word Problems

1. **Basic Problems** are exactly what they seem. You won't see any complicated wording or context in these problems. They simply present you with a math problem in a no-frills fashion. $2+2=4$
2. **Word Problems** are more complicated because you must sort through the words to find the math.
 - a. 2 steps: 1. **Find** the actual math problem and **THEN 2. Solve it.**
 - i. For example, Ben has two old books, and Lisa has two new books. How many books do they have? Which really means "Ben's 2 books + Lisa's 2 books = 4 books (old and new)."

7 Strategies for the Math Test

Note: The **PERFECT** strategy for the Math Test is to know and intelligently review the math, but we don't live in a perfect world, so the **BEST** strategy is **To Do Your Best**, which means to **use all the time wisely**.

1. **Guess Wisely:** Remember, answer the easy questions first. Use remaining time to guess intelligently.
 - a. **Your best guess always comes after eliminating flawed answer choices.**
 - b. Guess blindly if -- and only if -- you are running out of time.
2. **Use your calculator wisely**
 - a. If a fraction problem gives all answers in fractions, not decimals, you don't need your calculator.
 - b. There's no reason to use a calculator when you're dealing with variables.
 - i. **A defining variable is a symbol, such as x, used to describe any number.**
 - c. Use the calculator only when you know how your calculator can help you.
 - i. Math questions should be answered in a minute or less; they don't need intense calculation.
 - d. Use a calculator you understand, that has new batteries. Fancy is not better on the ACT.
3. Use the blank space to quickly **visualize the problem, sketch it out.**
 - a. Use shortcuts (math intuition) whenever possible.

4. **Avoid partial answers**, (answer to one step of the problem) not to the whole problem. [Example](#)
5. On word problems, **the last sentence of the problem usually tells you what the question is looking for**.
 - a. Reread it once you've formulated your answer to ensure you answered the real question.
6. Know the **"order of difficulty."**
 - a. The ACT math questions are -- for the most part -- easier in the beginning, harder near the end.
 - i. Pace yourself accordingly: easier questions get < a minute, harder get > than a minute.
 - ii. OR Spend the full 60 minutes working on the first forty questions, guess on the last twenty.
7. Use a Specific Process:
 - a. **No Process**: It is obvious; choose the correct answer. Remember, it's a timed test.
 - b. **Solution Process** for answering questions:
 - i. Read the question without paying attention to the answer choices.
 - ii. Make sure you understand what the question is asking, make a plan to find the answer.
 - iii. Answer the question as if there were no answer choices.
 - iv. Match your answer to the answer choices given.
 - v. Fill in the appropriate bubble on the answer sheet.
 - c. **Elimination Process**: If Solution Process can't or doesn't work.
 - i. Plug in the answer choices, and then guess intelligently.
 - ii. Eliminate the wrong answers—or some of them—by working with the choices. [Example](#)

Part II. Math Practice

1. Open the [ACT Practice link \(click, choose topic, scroll down, select test assigned #\)](#).
2. Complete **ACT Passage #1 (Do Passage #1, not 5, only for the math section.)**
 - a. **Time yourself: Record time here** **minutes** **seconds**. Goal: 12 min.
3. Record your answers in the following chart, answering all the questions.

Practice 1: Do Passage #1, not 5, only for the math section.

Did you practice these strategies? Options: Y, N, N/A (I just knew it, so I didn't need a strategy).

#	Answer	Guess?	Calculator?	Sketch it?	Partial Answers?	Last Sentence?	Solution?	Elimination?	Test?
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

[Computer-based Practice Tests](#) (The international computer-based program might differ from the U.S. version.)