

Chapter 1 : ACT Math Test Prep Course - Tutoring and Practice Tests

ACT Math Facts & Formulas a b a b m l a b b a a b b a Intersecting Lines Parallel Lines (l k m) Intersecting lines: opposite angles are equal. Also, each pair of angles along the same line.

These sections test the ability of a student for college-level admissions in the U. The four subject tests are: English, Mathematics, Science and Reading. The Mathematics section of the test contains 60 multiple-choice questions that reflect the various aspects of Mathematics like algebra, trigonometry, geometry etc. Students should be well prepared with their mathematical formulas and equations before they answer this section. Formulas are important as they will help students answer the questions correctly. These formulas need to be understood and practiced. Note these down to make your own list of formulas that you can refer to any time you want. The list that you make may appear to be long and cumbersome but if you follow a systematic approach towards learning them, then you will realize just how simple it is to use them in solving the problems. You have to make it a point to apply and learn all the formulas that are related to Mathematics. The test expects students to have the knack of solving sums and equations of high-school level with ease. While most questions in the Mathematics section are singular and unrelated to each other, some questions may be grouped as they pertain to the same set of data or illustration provided. You have to gauge whether the questions require a formula in the first place or not. Some grouped questions are solved through mere logic than the use of a formula. The best way to acquire a list of math formulas that will help you in the test is by solving the sample test given on the official website [www](http://www.act.org). By working on the practice exam, you will be able to learn some common formulas that may apply in the actual examination. The official sample test is available at the link: [The following is a list of a few common math formulas: You can also procure a detailed list from the following links: A list with practice questions: A list with flashcards: General and Applied Maths formulas: For a detailed list and their explanations through solved examples:](#)

Chapter 2 : The Top 10 ACT Math Formulas You've Never Heard Of (and 53 more).

The two biggest challenges of the ACT math test are the time crunch--the math test has 60 questions in 60 minutes!--and the fact that the test doesn't provide you with any formulas.

About two questions on each test will cover number lines and inequalities. The other topics are usually covered by just one question, if they are covered at all.

Number Lines and Inequalities

Number line questions generally ask you to graph inequalities. A typical number line graph question will ask you: To answer this question, you first must solve for x . Divide both sides by 2 to get: The circles at the endpoints of a line indicating an inequality are very important when trying to match an inequality to a line graph. An open circle at -3 denotes that x is greater than but not equal to -3 . A closed circle would have indicated that x is greater than or equal to -3 .

The x,y Coordinate Plane

The x,y coordinate plane is described by two perpendicular lines, the x-axis and the y-axis. The intersection of these axes is called the origin. The location of any other point on the plane which extends in all directions without limit can be described by a pair of coordinates. Here is a figure of the coordinate plane with a few points drawn in and labeled with their coordinates: As you can see from the figure, each of the points on the coordinate plane receives a pair of coordinates: The first coordinate in a coordinate pair is called the x-coordinate. If the point is to the right of the y-axis, its x-coordinate is positive, and if the point is to the left of the y-axis, its x-coordinate is negative. The second coordinate in a coordinate pair is the y-coordinate. The y-coordinate of a point is its location along the y-axis and can be calculated as the distance from that point to the x-axis. If the point is above the x-axis, its y-coordinate is positive; if the point is below the x-axis, its y-coordinate is negative. The ACT often tests your understanding of the coordinate plane and coordinates by telling you the coordinates of the vertices of a defined geometric shape like a square, and asking you to pick the coordinates of the last vertex. In the standard x,y coordinate plane, 3 corners of a square are $(2, 2)$, $(2, -2)$, and $(-2, 2)$. The best way to solve this sort of problem is to draw a quick sketch of the coordinate plane and the coordinates given. In this case, the sketch would look like this: A square is the easiest geometric shape which a question might concern. It is possible that you will be asked to deal with rectangles or right triangles. The method for any geometric shape is the same, though. Sketch it out so you can see it.

Distance

The ACT occasionally asks test takers to measure the distance between two points on the coordinate plane. Luckily, measuring distance in the coordinate plane is made easy thanks to the Pythagorean theorem. If you are given two points, and their distance will always be given by the following formula: The distance between two points can be represented by the hypotenuse of a right triangle whose legs are of lengths and The following diagram shows how the formula is based on the Pythagorean theorem see p. Calculate the distance between $(4, 3)$ and $(3, 8)$. To solve this problem, just plug the proper numbers into the distance formula: The distance between the points is which equals approximately

Finding Midpoints

Like finding the distance between two points, the midpoint between two points in the coordinate plane can be calculated using a formula. If the endpoints of a line segment are and then the midpoint of the line segment is: In other words, the x- and y-coordinates of the midpoint are the averages of the x- and y-coordinates of the endpoints. Here is a practice question: What is the midpoint of the line segment whose endpoints are $(6, 0)$ and $(3, 7)$? All you have to do is plug the end points into the midpoint formula. According to the question, and

Slope

The slope of a line is a measurement of how steeply the line climbs or falls as it moves from left to right. The variable most often used to represent slope is m . So, for example, the slope of a line that contains the points $(2, 4)$ and $(6, 1)$ is: Positive and Negative Slopes You can easily determine whether the slope of a line is positive or negative just by looking at the line. If a line slopes uphill as you trace it from left to right, the slope is positive. If a line slopes downhill as you trace it from left to right, the slope is negative. You can determine the relative magnitude of the slope by the steepness of the line. Conversely, the flatter the line, the smaller the slope will be. For practice, look at the lines in the figure below and try to determine whether their slopes are positive or negative and which have greater relative slopes: Lines l and m have positive slopes, and lines n and o have negative slope.

Special Slopes

It can be helpful to recognize a few slopes by sight. A line that is horizontal has a slope of 0. A line that makes an angle with a

horizontal has a slope of 0 or $\hat{=}$ 0. Line b has slope $\hat{=}$ -1 because it makes an angle with the horizontal and slopes downward as you move from left to right. Line c has slope 1 because it makes an angle with the horizontal and slopes upward as you move from left to right. Line d has undefined slope because it is vertical. In other words, parallel lines are lines that share the exact same slope. In coordinate geometry, perpendicular lines have negative reciprocal slopes. In the figure below are three lines. Lines q and r both have a slope of 2, so they are parallel. On the ACT, never assume that two lines are parallel or perpendicular just because they look that way in a diagram. If the lines are parallel or perpendicular, the ACT will tell you so. Perpendicular lines can be indicated by a little square located at the place of intersection, as in the diagram above. It is also possible to find the slope of a line using the equation of the line. In addition, the equation of a line can help you find the x- and y-intercepts of the line, which are the locations where the line intersects with the x- and y-axes. This equation for a line is called the slope-intercept form: **Finding the Slope Using the Slope-Intercept Form** If you are given the equation of a line that matches the slope-intercept form, you immediately know that the slope is equal to the value of m. In this case, you will have to manipulate the given equation until it resembles the slope-intercept form. **Finding the Intercepts Using the Slope-Intercept Form** The y-intercept of a line is the y-coordinate of the point at which the line intersects the y-axis. Likewise, the x-intercept of a line is the x-coordinate of the point at which the line intersects the x-axis. To sketch a line given in slope-intercept form, first plot the y-intercept, and then use the slope of the line to plot another point. Connect the two points to form your line. Since the slope is equal to $\hat{=}$ -2, the line descends two units for every one unit it moves in the positive x direction. The y-intercept is at 3, so the line crosses the y-axis at 0,3. The two equations that are most important in terms of graphing are and If you add lesser-degree terms to the equations, these graphs will shift around the origin but retain their basic shape. You should also keep in mind what the negatives of these equations look like: These topics do not regularly appear on the ACT, but it still pays to prepare: **A parabola** is the graph of a quadratic function, which, you may recall, follows the form The equation of a parabola gives you quite a bit of information about the parabola. The y-intercept is the point 0, c. **Circles** A circle is the collection of points equidistant from a given point, called the center of the circle. Circles are defined by the formula: Once you know and understand this equation, you should be able to sketch a circle in its proper place on the coordinate system if given its equation. You should also be able to figure out the equation of a circle given a picture of its graph with coordinates labeled. **Ellipses** An ellipse is a figure shaped like an oval. It looks like a circle somebody sat on, but it is actually a good deal more complicated than a circle, as you can see from all the jargon on the diagram below. The two foci are crucial to the definition of an ellipse. The sum of the distances from the foci to any point on the ellipse is constant. To understand this visually, look at the figure below. The quantity is constant for each point on the ellipse. The line segment containing the foci of an ellipse with both endpoints on the ellipse is called the major axis. The endpoints of the major axis are called the vertices. The line segment perpendicularly bisecting the major axis with both endpoints on the ellipse is the minor axis. The point midway between the foci is the center of the ellipse. When you see an ellipse, you should be able to identify where each of these components would be. The equation of an ellipse is: With respect to this formula, remember that: The center of the ellipse is h,k. The length of the horizontal axis is 2a.

Chapter 3 : ACT SparkNotes Test Prep: Coordinate Geometry

ACT Math. Flash Cards. Formulas, definitions, and concepts ACT Math Bible Flash Cards. How to Study Math Flash Cards. PowerScore. Supplemental ACT Prep.

We provide the exact tutoring and practice tests you need to ace the ACT Math test. My math ACT score before doing your program was a 17 horrible!!! After using your program, I took the ACT and scored a 26 on the math. My huge jump was all because of the help I received from you. I told my high school counselor about you, and she is sharing it with all our students and parents. Thank you, thank you, thank you. Every lesson includes videos, guided practice, self-tests, and more. Background lessons If you are struggling on a particular topic, we offer relevant background lessons to rebuild your math foundation! Grade reporting and progress tracking We offer detailed grade reporting and progress tracking to keep on task while completing your ACT Math prep course! This site has significantly improved my confidence going into the ACT exam. The progression of the material basic-advanced is perfect and feels very natural. After deciding to return to college after many years and taking my ACT again after 29 years, I am relieved and thankful to have MathHelp. I love the video segments and I have loved being able to print off the extra problems too. I also want to let you know that I have paid for another program to help me with my ACT math prep, but the math problems only came with answers and not step-by-step solutions and so I was not able to see where I was making mistakes. With MathHelp I can see exactly what to do and that helps me to learn and retain the lesson. This resource is worth every penny. I was able to take my ACT math test and tested out of college algebra and my placement was in Trig. It is much cheaper than an ACT tutor and I actually learn a lot better. I am so glad I found you. I will spread the word. I am very confident that you helped me a great deal. Best thing since sliced bread! It has a ton of examples and practice problems. Easy to use and well laid out. The lessons are very clear and understandable " I wish I had this when I was in school!! I expect that my ACT scores will improve considerably after I complete the different topics. Thanks for the ACT math help! I do not know math. I am 41 and going for my ACT. She loves the interactive, go at your own pace style of MathHelp. I absolutely love this ACT study guide and certainly would and have recommended it. I can understand much more from this ACT math prep than my teachers. I truly recommend this site. Our ACT Math review goes far beyond the typical study guide by including comprehensive instruction, guided practice, and interactive tests. All of these features are available for anyone to try out by simply selecting a lesson below. And members receive much more, including access to ACT Math diagnostic tests, background lessons, and grade reports. Additionally, our approach to ACT Math instruction is direct and to the point. And our course only includes the topics that are covered on the test - nothing more and nothing less. We know that the best ACT Math test prep must be incredibly efficient as well. ACT Math test prep books and practice questions are not enough, and classes and tutors are too expensive. Below is our online ACT Math test prep course. Start now by clicking on a lesson below!

Chapter 4 : Top 10 Math Cheat Sheets - Math Concentration

Start studying Act Math Facts & Formulas. Learn vocabulary, terms, and more with flashcards, games, and other study tools.

Despite what many high school students believe, you need to know relatively few formulas for the New SAT Math section. The reason why there are so few formulas necessary for SAT Math is that the SAT is meant to test your reasoning skills more than your ability to memorize though in some cases, of course, memorization is necessary. There are always multiple avenues to the solution of a problem, and I teach my students how to take a consistent, accurate approach that utilizes a minimum of formulas and takes the path of least resistance to each answer. Usually, this involves solving the problem differently than you would in math class, stressing technique and common sense over pure memorization. Take, for example, the distance formula. The Pythagorean theorem is easier, more basic, and less prone to mistakes than the distance formula. So unless you are a whiz at the distance formula and never make careless mistakes on math questions, I would stick with the advice of Mr. That being said, there are still a few things you must know by heart on test day. Also know what the discriminant is. If the discriminant is ZERO, then there is 1 real root. Mean is the same as average. Median is the number in the middle after rearranging from low to high. In the case that the list has no true middle because it has an even number of terms, find the average of the middle two. Multiple modes are possible if there is a tie for greatest frequency: Integers are whole numbers, including zero and negative whole numbers. Think of them as hash marks on the number line. Remember that -3 is less than -2 , not the other way around sounds simple but is a common mistake. Prime numbers are positive integers that are only divisible by themselves and the number 1. Be able to list all the primes you between 1 and 50—remember that 1 is not a prime and there are no negative primes. By the way, 51 is not prime—that question actually showed up on a recent SAT. What, you forgot your times tables for 17? The prime factorization of 18, for example, is $3 \times 3 \times 2$. These are particular types of Right Triangles that just happen to have exact integers as sides. The SAT loves to use them, so know them by heart and save yourself the trouble of calculating all those roots. Here are the ones they use: Digits are to numbers what letters are to words. There are only 10 possible digits, 0 through 9. For example the multiples of 5 are 5,10,15,20 etc. The factors of x are the answers I get when I divide x by another integer. For example the factors of 60 are 30, 20,15,12,10,6,5,4,3,2,1, as well as $-5,-6$, etc. Remainder is particularly helpful on pattern and sequence problems. Consecutive integers are integers in order from least to greatest, for example 1,2,3. The SAT may also ask for consecutive even or odd integers. For example $-6,-4,-2, 0, 2, 4$ etc yes zero is even or 1, 3, 5 etc. Sum means the result of addition. Difference is the result of subtraction. The result of multiplication. Do not confuse with sum! Even numbers are all the integers divisible by 2, and odd numbers are all the other integers. Zero is neither negative nor positive. Be aware of strange tricks with negatives, and that negatives taken to EVEN powers are positive and that negatives taken to ODD powers are negative. The fewer formulas you need to remember, the more you can focus on technique, and good technique is the true key to an excellent SAT score. This is the SAT, where the only thing that matters is that you get the correct answer as quickly as possible. So you can get away with shortcuts galore. This is why the best SAT math tutors focus on problem recognition, technique and logic more than they focus on pure memorization.

Chapter 5 : ACT Math: Practice tests and calendrierdelascience.com

definitions and terms act formulas algebra math Flashcards. Browse sets of definitions and terms act formulas algebra math flashcards.

Much of the content is in the form of PDF files which are available directly from the sidebar. Some more tips for quick navigation: Completely new to the SAT? Completely new to the ACT? Ready to dive right in with math questions? The Practice page has what you need. Find out more about me Erik Jacobsen on the About page. Whether you are teaching yourself or teaching others, you will find plenty of help here, all of it free to download, copy, print, and distribute under a Creative Commons license. These facts and formulas mostly facts, really seem to be "required knowledge" on just about every SAT Math test. This guide is a little more comprehensive than the Must-Know guide: Two of these strategies plugging in numbers and working with the answers are so useful that they get their own quiz and mini-quiz. This guide contains a short list of math vocabulary words that show up time and again on the SAT. These words will appear without explanation in the math questions on the test, so you better know them cold! If it is the night before the test and you are pressed for time, the one-page tl;dr version can be found here. Complete answers are included, and many questions involve vegetables of some kind. Because it is important to have enough vegetables every day. Math Strategies Quiz pdf, 18 pages -- When you are stumped on an SAT or ACT math question, there are two very useful strategies that may help you to get the correct answer. This review quiz will help you become familiar with these strategies so that they will be second nature when you take the SAT or ACT for real. Complete answers are included. For many more practice questions, see the Math Practice section of this web site. You have a long list of other formulas to know as it is! Note that you are not given any formulas on the test. This guide lists about 50 of the most important physics formulas for the physics subject test. Use as a reference, or for quick review, or as something to e-mail to friends to help them out. There are no given formulas on the ACT, so this guide is designed to fill that gap. I specialize in ACT math, pre-calculus and calculus, and physics. If you need extra help, or you would like to improve your test scores, or you have comments or suggestions, you can find me ErikTheRedTutor on Twitter. Or, you can contact me here:

Chapter 6 : The Top 10 SAT Math Formulas You Need to Know for the New SAT and PSAT and the rest of

Unlike the SAT, the ACT does not provide you with a list of basic math formulas to rely upon at the beginning of the ACT math calendar. The science.com means you will need to be able to recall math formulas on the ACT.

Standard Deviation showed up on the December ACT, but you can use your calculator see link to solve. Mean is the same as average. Median is the number in the middle after rearranging from low to high. In the case that the list has no true middle because it has an even number of terms, find the average of the middle two. Multiple modes are possible if there is a tie for greatest frequency: To calculate the median of an odd number of terms, simply add 1 and divide by 2. Integers are whole numbers, including zero and negative whole numbers. Think of them as hash marks on the number line. Remember that -3 is less than -2 , not the other way around sounds simple but is a common mistake. Prime numbers are positive integers that are only divisible by themselves and the number 1. Be able to list all the primes you between 1 and 50—remember that 1 is not a prime and there are no negative primes. By the way, 51 is not prime—that question actually showed up on a recent SAT. What, you forgot your times tables for 17? The prime factorization of 18, for example, is $3 \times 3 \times 2$. These are particular types of Right Triangles that just happen to have exact integers as sides. The SAT loves to use them, so know them by heart and save yourself the trouble of calculating all those roots. Here are the ones they use: Digits are to numbers what letters are to words. There are only 10 possible digits, 0 through 9. For example the multiples of 5 are 5,10,15,20 etc. The factors of x are the answers I get when I divide x by another integer. For example the factors of 60 are 30, 20,15,12,10,6,5,4,3,2,1, as well as $-5,-6$, etc. Remainder is particularly helpful on pattern and sequence problems. Consecutive integers are integers in order from least to greatest, for example 1,2,3. The ACT may also ask for consecutive even or odd integers. For example $-6,-4,-2, 0, 2, 4$ etc yes zero is even or 1, 3, 5 etc. Sum means the result of addition. Difference is the result of subtraction. The result of multiplication. Do not confuse with sum! Even numbers are all the integers divisible by 2, and odd numbers are all the other integers. Zero is neither negative nor positive. Be aware of strange tricks with negatives, and that negatives taken to EVEN powers are positive and that negatives taken to ODD powers are negative. Also be familiar with the inverses of these trigonometric functions and the reciprocals of these trigonometric functions -- the reciprocal of sine is cosecant \csc , the reciprocal of cosine is secant \sec , and the reciprocal of tangent is cotangent \cot . That being said, the fewer formulas you need to remember, the more you can focus on technique, and good technique is the true key to an excellent ACT score. This is the ACT, where the only thing that matters is that you get the correct answer as quickly as possible. So you can get away with shortcuts galore. This is why the best ACT math tutors focus on problem recognition, technique and logic more than they focus on pure memorization. In other words, these formulas are a great tool and do allow for shortcuts, but you should also focus on logical and conceptual understanding skills, and taking plenty of practice ACTs to hone your skills. Studying a formula sheet is no substitute for putting in the hard work by taking at least full ACT practice tests, and then reviewing the results properly, waiting a few weeks, and then re-trying questions from scratch in other words, without seeing your previous work, a.

Chapter 7 : Math Formulas Download Maths Formulas pdf Basic Math Formula @ BYJU'S™S

Google "ACT Math Formulas" and you get a grab-bag of subpar results, including an old PDF from and two popular but glaringly incomplete lists of ACT Math Formulas. The fact is that the ACT Math section has many more required formulas and concepts than the ones you can find easily online.

Chapter 8 : SAT Math Facts and Formulas

Here's the thing about the ACT math section—they don't give you a cheat sheet with all the formulas written down on them. It's up to you to memorize them. But some formulas are required more frequently than others.

Chapter 9 : The ACT Test Math Practice Test Questions | ACT

3 Trigonometry Pythagorean Theorem $d^2 = a^2 + b^2 + c^2$ Trigonometric Ratios $\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$ $\cos A = \frac{\text{adjacent leg}}{\text{hypotenuse}}$ $\tan A = \frac{\text{opposite leg}}{\text{adjacent leg}}$ $\csc A = \frac{1}{\sin A}$