ACT MATH

TCC TRIO PROGRAM

Content

∞14 questions dealing with Pre-Algebra

∞ 10 questions from Elementary Algebra

∞ 9 questions based on Intermediate Algebra

∞ 9 questions from Coordinate Geometry

∞ 14 questions from Plane Geometry

∞ 4 Trigonometry questions

The questions assume knowledge of basic formulas and computational skills but do not require memorization of complex formulas or extensive computation

Pace Yourself

1. 60 questions

2. 60 minutes

3. Don't waste time on any one problem, spend your time doing as many problems as you can

4. The questions are arranged in order of difficulty

5. RELAX: answering only half of the questions right will give you a score of 20 on the Math Section

Stay Focus

Take 45 minutes to go through the test

1. Answer the questions that you know how to do

2. Guess on the questions you know you'll never get

Click to add text

3. Mark the harder questions that you'll come back to later

Spend the last 15 minutes going over the test again

4. Answer the questions you skipped

5. Make sure you have answered every question

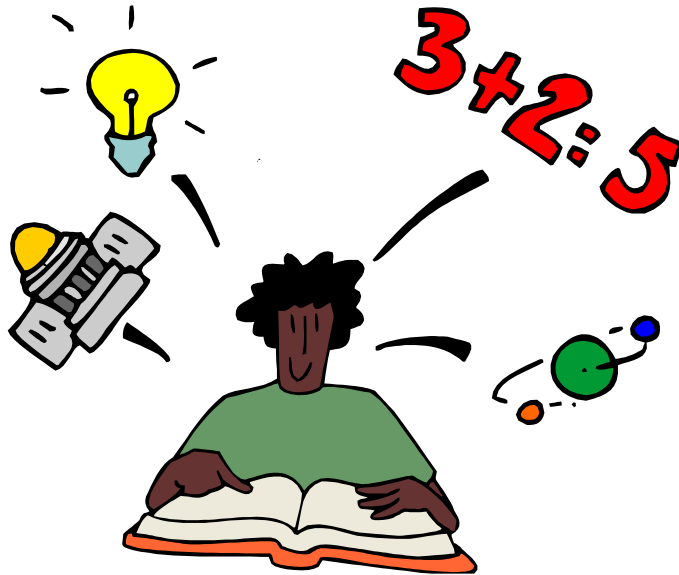6. Spend any remaining time checking your work

Calculators

ALL PROBLEMS ON THE ACT CAN BE SOLVED WITHOUT USING A CALCULATOR

1.You may use a four-function, scientific, or graphing calculator on the Math test

2. Calculators, such as TI-89 and TI-92 are **NOT** permitted (see page 4 in the ACT prep booklet)

3. Bring a calculator that you know how to use – bringing a more powerful calculator that you *do not know how to use* isn't going to help you

Don't be tricked

1. Read the problem carefully

2. Pay attention to what the question asks you to find

3. Watch for unnecessary information

4. Label the figures with numbers or letters

5. Draw a picture

Be Smart

1. There's more than one way to solve these problems

2. It's a timed test – find a quick and reliable way to solve the problem

3. Do your work in your test booklet

4. Be careful using your calculator – it's easy to push the wrong button

5. Don't get involved in long, complicated, or tricky calculations

Check Your Answer

1. Make sure you answered the question that was asked

2. Each of the wrong answers represents a common mistake that you might have made

3. If your answer isn't one of the choices, reread the question and check your work

When You
Get Stuck

BACKSOLVE

Take advantage of the multiple-choice format and try each answer until you find the one that works.

WARNING: Doing it this way will take more time.

The greatest common divisor of 84, 90, and 66 (that is, the largest exact divisor of all three numbers) is:

A. 6

B. 12

C. 18

D. 36

E. 90

$84 = 2 \cdot 2 \cdot 3 \cdot 7 \quad 90 = 2 \cdot 3 \cdot 3 \cdot 5 \quad 66 = 2 \cdot 3 \cdot 11$

$2 \cdot 3 = 6$

CORRECT ANSWER: A

GUESSTIMATE

If you can estimate the correct answer, then you should be able to eliminate at least one or two answer choices.

What is 2% of 60?

A. ~~120~~

B. ~~12~~

C. 1.2

D. 0.12

E. ~~0.012~~

$$60 \times 0.02 = 1.2$$

CORRECT ANSWER: C

Things to Remember
on the Math ACT

Be prepared, don't spend to much time reading the directions

Bring a calculator that you know how to use

Read the question carefully

Pay attention to what the question asks you to find

Watch for unnecessary information

Draw a picture

Pace yourself (60 questions/60 minutes)

Things to Remember on the Math ACT

Do the easy questions first, then try the hard ones

Show some work and circle your answers in your test booklet

Don't waste too much time on one problem

Eliminate wrong answers before guessing

Answer every question

Check your work

Work for the whole 60 minutes

SAT Math Prep

Test Tips

An actual SAT Mathematics Test contains 58 questions to be answered in 80 minutes total.

- Read each question carefully to make sure you understand the type of answer required.

- For the calculator section, be sure it is permitted, is working on test day, and has reliable batteries.

- Use your calculator wisely.

- Solve the problem.

- Locate your solution among the answer choices.

- Make sure you answer the question asked.

- Make sure your answer is reasonable.

- Check your work.

Calculator Tips

- Review the latest information on permitted and prohibited calculators.

- You are not required to use a calculator. All the problems can be solved without a calculator.

- If you regularly use a calculator in your mathematics work, use one you're familiar with when you take the mathematics test. Using a   more powerful, but unfamiliar, calculator is not likely to give you an advantage over using the kind you normally use.

SAT Math Prep

- DIRECTIONS: Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

- Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

- You are permitted to use a calculator on one part of this test. You may use your calculator for the permitted section but not for the no calculator section.

SAT Math Prep Questions

A car averages 27 miles per gallon. If gas costs $4.04 per gallon, which of the following is closest to how much the gas would cost for this car to travel 2,727 typical miles?

A. $44.44

B. $109.08

C. $118.80

D. $408.04

E. $444.40

D- This is the correct answer. If you divide 2,727 miles by 27 miles per gallon you will get the number of gallons: = 101. Then, multiply the number of gallons by the cost per gallon: 101(4.04) = 408.04. This gives the cost of gas for this car to travel 2,727 typical miles.

When x = 3 and y = 5, by how much does the value of $3x^2 - 2y$ exceed the value of $2x^2 - 3y$?

A.   4

B.   14

C.   16

D.   20

E.   50

B-14 is the correct answer. When you use x = 3 and y = 5 in the given expressions, $3x^2 - 2y = 3(3)^2 - 2(5) = 27 - 10 = 17$ and $2x^2 - 3y = 2(3)^2 - 3(5) = 18 - 15 = 3$. Then subtract 3 from 17 to get 14.

SAT Math Prep Questions

What is the greatest common factor of 42, 126, and 210 ?

A.   2
B.   6
C.   14
D.   21
E.   42

E- 42 is the correct answer since it is the largest number that is a factor of all three numbers given. You can find the greatest common factor by writing out the prime factorization of all three numbers and then taking each of the common prime factors to the lowest power that appears for that factor: 42 = 2 × 3 × 7; 126 = 2 × 32 × 7; and 210 = 2 × 3 × 5 × 7 So the

 greatest common factor is 2 × 3 × 7 = 42.

SAT Math Prep

The SAT Math Test usually breaks down into 2 sections: the no calculator section consists of 15 multiple choice questions and 5 grid in questions in which you will have 25 minutes to complete, the calculator section consists of 30 mutiple choice questions and 8 grid in questions which includes one extended thinking questions, you will have 55 minutes to complete that section.

The three main categories you will encounter are: Heart of Algebra, Passport to Advanced Math, and Problem Solving and Data Analysis.

Heart of Algebra: this category will include linear equations, inequalities, functions and graphs.

Passport to Advanced Math: this category will include nonlinear expressions.

Problem Solving and Data Analysis: this category will include rates, ratios, percentages, and data from graphs and tables.

SAT Math Prep Questions

Algebra

Which of the following is a factor of the polynomial $2x2 - 3x - 5$?

A. $x - 1$

B. $2x - 3$

C. $2x - 5$

D. $2x + 5$

E. $3x + 5$

The correct answer is H. $2x2 - 3x - 5 = (x + 1)(2x - 5)$.

If $xy = 144$, $x + y = 30$, and $x > y$, what is the value of $x - y$?

A. 4

B. 6

C. 18

D. 22

E. 24

Answer: C Solve the first equation for y, $y = 144$ over x. Then substitute 144 over xfor y in the second equation: $x + 144$ over x = 30. Multiplying each side by x, $x2 + 144 = 30x$. Subtracting 30x from each side, $x2 - 30x + 144 = 0$. You could solve this equation by factoring: $(x - 24)(x - 6) = 0$, and then setting each factor equal to zero, x = 24 or x = 6. However x = 6 will not work (if x = 6 then y = 24, but the problem says that x > y). So, x= 24. Putting this value of x back into either of the original equations, y = 6. Then $x - y = 24 - 6 = 18$.

Word Problems

A DVD player with a list price of $100 is marked down 30%. If John gets an employee discount of 20% off the sale price, how much does John pay for the DVD player ?

A. $86.00

B. $77.60

C. $56.00

D. $50.00

E. $44.00

The correct response is C: $100(0.70) = 70$ is the amount that would be paid if the DVD was marked down 30%, but there is another discount of 20%, so the price is going to be 80% of the marked-down price. The price will be $70(0.80) = 56$.

What is the degree measure of the acute angle formed by the hands of a 12-hour clock that reads exactly 1 o'clock?

A.   15°

B.   30°

C.   45°

D.   60°

E.   72°

Answer: B One complete rotation of a clock hand is 360°, and there are 12 hourly markings on a clock. When the hands read exactly 1 o'clock, the degree measure of the angle formed by the clock hands is of a complete rotation, or (360°) = 30°.

SAT Math Prep Questions

Which of the following statements must be true whenever n, a, b, and c are positive integers such that n < a, c > a, and b > c ?

A. a < n

B. b – n > a –n

C. b < n

D. n + b = a + c

E. 2n > a + b

Answer: B. Since b > a, subtracting n from each side, b – n > a – n, will not change the relationship between b and a.

An industrial cleaner is manufactured using only the 3 secret ingredients A, B, and C, which are mixed in the ratio of 2:3:5, respectively, by weight. How many pounds of secret ingredient B are in a 42-pound (net weight) bucket of this cleaner?

A.   4.2

B.   12.6

C.   14.0

D.   18.0

E.   21.0

Answer: B. If you let 3x be amount of secret ingredient B, you can set up the equation 2x + 3x + 5x = 42. Since 10x = 42, x = 4.2, and B = 3x = 12.6.

Need More Assistance?

We offer free SAT and ACT test prep books and fee waivers!

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