



# 10n1 SAT Basic Math Review

**Ladies and Gentlemen, regardless of whether you are a math nerd or hate the stuff, there's a lot of basic old math concepts, definitions, properties and terminology that you need to review, remember and be ready to regurgitate QUICKLY!!!**

**Pre-Step 1-** Peruse and Review carefully a basic math reference such as in Chapters 11 & 12, pages 331-507 in Barron's New SAT 22<sup>nd</sup> Edition. Be sure to do all the exercise examples carefully in these explanatory sections.

**Pre-Step 2-** Memorize the directions to the Math Sections of the SAT, especially the Reference Information about Geometric Figures. Know this stuff cold so you can immediately jump into the questions and waste no time during the test.

**Pre-Step 3-** Review and memorize the following inside-out, upside-down, backwards and forwards. Make charts and diagrams on your bedroom walls, refrigerator doors, etc.

## 1) Evens, Odds, Negatives, Positives & Primes:

*Odd + Odd = Even but Odd x Odd = Odd ; O + E = O but O x E = E ; etc.*

*A - (-B) = A + B and (-A)(-B) = AB but (-A)(-B)(-C) = ? ; 1 is Prime or not ?!*

## 2) Multiplication Tables:

*Know them forwards and backwards, multiplying and dividing through 12 x 12 and squares through 16 x 16.*

*For example: What is 11 x 12 = ? What is 108 / 9 = ? What is 15 x 15 = ?*

## 3) Decimal, Fraction, %, Ratio Equivalencies:

*Know Tenths, Eighths, Sixths, Fifths, Fourths, Thirds, Halves.....*

*For example: 1/8 = 1:8 = .125 = 12 1/2% Make a Chart and Memorize!*

## 4) Exponents, Powers & Radicals:

*Know 2, 3 & 5 powers out to 2<sup>8</sup>, 3<sup>5</sup> & 5<sup>4</sup> with all their permutations. Know how exponents and radicals work and how to manipulate them quickly, e.g. (2<sup>4</sup>)<sup>2</sup> = 2<sup>3</sup> x 2<sup>5</sup> = ?, 2<sup>4</sup> x 2<sup>2</sup> = ?, 3<sup>7</sup> / 3<sup>2</sup> = ?, 4<sup>3/2</sup> = ?; 5<sup>(5-2)</sup> = ?; (5<sup>8</sup>)<sup>1/2</sup> = ?; Unit Digit of 2<sup>2000</sup> = ?, etc.*

*When in Doubt Do it Out! (2<sup>4</sup>)<sup>2</sup> = (2x2x2x2)(2x2x2x2) = 2<sup>8</sup> = 256*

## 5) Right Triangle Formulas and Ratios:

*Know the typical patterns that appear often and remember how to use a ratio box to manipulate the patterns quickly,*

$$\text{e.g. } a^2 + b^2 = c^2$$

$$a : b : c$$

$$3 : 4 : 5$$

$$5 : 12 : 13, \text{ etc.}$$

## 6) Quadratic FOIL (backwards & forwards):

$$(A + B)^2 = (A + B)(A + B) = A^2 + 2AB + B^2$$

$$(A - B)^2 = (A - B)(A - B) = A^2 - 2AB + B^2$$

$$(A + B)(A - B) = A^2 - B^2, \text{ e.g.}$$

$$\text{If } 16Q^6R^{10} - 36S^4T^8 = 25 \text{ and } 4Q^3R^5 + 6S^2T^4 = 5 \text{ then } 4Q^3R^5 - 6S^2T^4 = ?$$

**REMEMBER:** Standardized tests test **Standardized Patterns**. Learn to **Anticipate, Recognize, Follow and Manipulate those Patterns** precisely and you'll rule the test universe!

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