

# **“Types” of Keystone Algebra Problems**

1. **“Simplify”**

Order of Operations, Combining like terms, breaking down radicals (square/cubed roots), laws of exponents, factoring, simplest form (reduced), decimals/fractions...

2. **“Calculate”**

Percents, proportions, rates, GCF, LCM, measurement, estimation, absolute value...

3. **“Substitution”**

Plugging numbers into a formula/equation for variables...

4. **“Create an Equation or Expression”**

Using the givens, make up an equation or expression that represents the situation...

5. **“Linear Equations”**

Rewriting, Slope-Intercept Form ( $y=mx+b$ ), Standard Form ( $Ax+By=C$ ), Slope, Intercepts, Graphing, Line of Best Fit, Inequalities, Solving Systems of Equations/Inequalities...

6. **“Charts”**

Bar Graphs, Circle Graphs, Line Graphs, Scatter Plots, Stem & Leaf Plot, Box & Whisker...

7. **“Statistics”**

Data Analysis, Measures of Central Tendency/Dispersion, Frequency, Probability, Odds, Combinations/Permutations, Independent/Dependent Events, Mutually Exclusive Events, Fundamental Counting Principle...

8. **“Math Rules”**

Commutative, Associative, & Identity Properties, Number Sets, Prime/Composite, Additive/Multiplicative Inverses, Sequences...

9. **“Non-Linear Functions”**

Rational Expressions, Polynomials (Tri, Bi, Mono), [Logarithms, Natural Logarithms (base  $e$ ), Imaginary/Complex # ( $i$ ), Quadratic Equations ( $x^2$ , U-Shaped), Min/Max Values]

10. **“Open-Ended Questions”**

Must show all steps and explain in detail with words! Make sure you answer the question(s) that are asked and check your work.

# Test-Taking Tips for Students

## **1.) Have a Positive Attitude**

Approach the big test little by little. It might be tough, but you can do it! A positive attitude goes a long way toward success.

## **2.) Make a Plan**

Know what topics you will see on the Keystone and take time to go back and review them. Look over what you think you already know, and spend time studying the most challenging topics.

## **3.) The Night Before**

Cramming doesn't work for these types of test. If you've followed a study plan, the night before the test you should do a quick review and get to bed early. Remember, your brain and body need sleep to function well, so don't stay up late!

## **4.) The Morning of the Test**

Did you know that you think better when you have a full stomach? So don't skip breakfast the morning of the test. Get to school early and do a ten-minute power study right (maybe look over your calculator guides) before the test, so your brain is turned on and tuned up.

## **5.) Test Time**

Before the test begins, make sure you have everything you'll need - scratch paper, extra pencils, your calculator (extra batteries will be available if yours dies). Remember to always carefully read the instructions and the test questions! You want to make sure you are correctly answering the question they asked.

## **6.) Manage Your Time**

Be sure to take your time on the keystones! You can answer the questions in order, or answer the easy ones first to help build your confidence before going back to work on the more complex problems. You might be reminded of information from other test questions! Also, try your best to stay focused.

## **7.) I'm Stuck!**

Those tricky problems can knock you off balance. Don't get worried or frustrated. Reread the question to make sure you understand it, and then try to solve it the best way you know how. If you're still stuck, circle it and move on. You can come back to it later. What if you have no idea about the answer? Review your options and make the best guess you can using process of elimination.

## **8.) Multiple-Choice Questions**

Always think about the problem first, but sometimes you work backwards on multiple-choice questions (check the answers in the problem). Think about it; Make sure your answer makes sense.

## **9.) Neatness Counts**

If your 4s look like 9s, it could be a problem. Be sure that your writing is legible and that you erase your mistakes. Show all work you possibly can, especially on open-ended problems. You don't necessarily have to "write a book," but be sure to *prove* and explain what steps you went through to get your answer, *even* if you used the calculator!!!

## **10.) I'm Done!**

Not so fast! When you complete the last item on the test, remember that you're not done yet. If you have any time, go back to review your answers, making sure that you didn't make any careless mistakes (such as putting the right answer in the wrong place or skipping a question). Spend the last remaining minutes going over the hardest problems before you turn in your test. Don't worry about others.

*Good Luck* 😊