



The Top 10 Arithmetic Problems

Every Parent Should Do With Their Child

$12 \times 5 =$

$\frac{1}{2} \times 15 =$

(express your answer as a decimal number)

$47 + 9 =$

$\frac{1}{2} + \frac{7}{2} =$

(express your answer as a reduced fraction)

$14 \times 200 =$

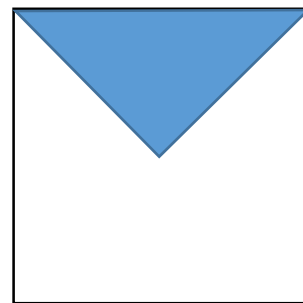
$25\% \text{ of } 84 =$

$36 - 25 =$

$80 \text{ out of } 400 = \underline{\quad} \%$

$8 \times 111 =$

What percentage of the square is shaded in?





Answer Key & Notes

60 – Students must know how to multiply by 5. If your child does not understand, get a stack of \$5 bills and have them practice multiplying using \$5 bills. Hopefully, they will soon learn that two 5's makes 10, so $12 * 5$ can be thought of as $(12/2) * 10$. Rather than multiplying by 5, teach them to multiply by 10 and then chop that number in half. I find that many students find this easier and it gets them familiar with the ease of multiplying by 10.

56 – Students that have not learned their addition facts struggle greatly to add 9 to a number and usually you will see them counting fingers or their lips moving as they count up. Try teaching your child that 9 is one less than 10, so to add 9, just add 10 and then subtract 1. The number 10 is the heart of our number system, so this is +10-1 method is one more way of helping them see the importance & usefulness of 10.

2800 – Students often panic when faced with large numbers. When asked what $14 * 2$ is, they often answer quickly, but when asked $14 * 200$ they might freeze. Understanding that large numbers are just little numbers with lots of zeros can be a lifesaver for some students. Simply cover up the two zeros on 200 and ask what $14 * 2$ is, then ask what $14 * 20$ is, and lastly ask what $14 * 200$ is. It might be helpful to have a few \$1 bills, \$10 bills and \$100 bills handy to help them overcome any fear of larger numbers.

11 – Subtraction can overwhelm students that do not know their arithmetic facts. As someone who was wired with a calculator in my brain, I often solve subtraction by doing addition. Rather than thinking, "What's 36 minus 25?", I will ask myself, "What do I have to add to 25 to get to 36?" I start by adding 10's to my starting number, 25, until I get close to my target number, 36. Lastly, I add or subtract a little to my collection of 10's to reach the exact target number.

888 – Some students will write out this problem as a classic multiplication problem and then proceed to do $8 * 1$, then $8 * 1$, then $8 * 1$ to get 888. That is a sign that the student has never really stopped to think about what they do, they just do math without thinking about math. Math will never get easier for a child if they never stop to observe patterns and find shortcuts. Try to retrain a child that does math this way to "**Stop doing** math and **start thinking** about math."

7.5 – A large percentage of students will go into a state of shock when faced with fractions. Many students do not understand that fractions are a way of expressing division and that the little fraction bar is equivalent to a division sign. Say this problem out loud as "Half of 15" and their ability to do it correctly will increase greatly. To help improve a child's understanding of this problem, lay out 15 m & m's (or carrot sticks if you live a low carb lifestyle) and have your child split the pile in half by creating two equal piles. Then repeat with varying numbers alternating between even and odd numbers. Once they have the hang of it, start breaking piles into thirds, then fourths and so on.

4 – Students are unsure of how to add, subtract, multiply or divide fractions. Many will try to "cross multiply" just about everything. I never cross multiply anything! Try to teach fractions using portions of circles and get your child to assign some physical meaning to them, as I did when I created the *Algebra Explained* iPad app series. Part of the series is four **somewhat humorous videos** that involve pie, lots of pie, and how to do fractions. Common Denominator & Adding: [youtube.com/watch?v=D2Vwi2QvStU](https://www.youtube.com/watch?v=D2Vwi2QvStU)
Subtracting: [youtube.com/watch?v=Vkh_mWgkutg](https://www.youtube.com/watch?v=Vkh_mWgkutg)
Multiplying: [youtube.com/watch?v=w73EDi1-1Vl](https://www.youtube.com/watch?v=w73EDi1-1Vl)
Dividing: [youtube.com/watch?v=UCxTAZxoPQc](https://www.youtube.com/watch?v=UCxTAZxoPQc)

21 – Many of the math problems our students encounter in school get them bogged down in minutia and cause them to lose sight of the bigger picture. Stores do not put merchandise on sale for 19.3% off, yet textbooks will give equal attention to 19.3% off and 25% off. As a result, students think all percent problems require detailed calculations. Help your child cut through the noise and focus on the key percentage problems such as 25%, 10%, 15%, 20%, 33% and 50%. When they learn that most (excluding 15%) of these common percentages come from common fractions such as $1/4$, $1/10$, $1/5$, $1/3$ and $1/2$ they can use their division skills to compute percentages quickly. Teach them how to compute 10% of a number by moving the decimal one place and then they can quickly find 20%, 30% and so on by simply doubling, tripling, etc. their 10% value. I have uploaded two of my worksheets to help build the connection between percentages and fractions here: <https://transformativetutoring.com/percent-shape-decimal-1/>
<https://transformativetutoring.com/percent-shape-decimal-2/>

20% – Many students do not understand that the word "percent" can be thought of as "per-cent" or even better "per 100." Once a student starts to think as percentages as "per 100" these problems usually get easier. Because this problem is 84 out of 400, the student should try to think of how many there are per 100. Setting up a proportion and emphasizing that you need to get a common denominator of 100 often helps, for example:

$$\frac{84}{400} = \frac{\quad}{100}$$

25% – When students connect fractions with decimals and percentages, they can quickly answer questions like this, but if they do not understand the connection then percentages can remain a mystery their entire lives. Do the worksheets mentioned previously to help build this understanding.