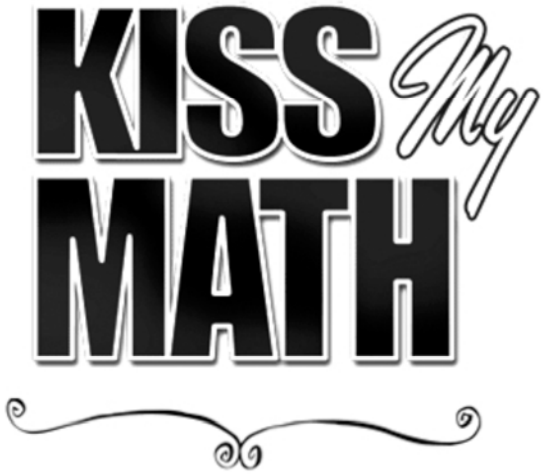

Solution Guide for Chapter 8

Here are the solutions for the "Doing the Math" exercises in *Kiss My Math*!

DTM from p.113

2. $(8g)(-2gh) = ?$

Everything is being multiplied together, so everything gets included in the "squishing!" We count one negative signs, so it'll still be there in the answer. Moving the numbers to the front, and gathering variables, we get: $(8)(-2)ggh = -16g^2h$

Answer: $\mathbf{-16g^2h}$

3. $(-9a)(-5b)(\frac{1}{9}a) = ?$

Everything is being multiplied together, so everything gets included in the "squishing!" We count two negative signs, so they'll cancel away completely – from this point

forward we get rid of them completely. Moving the numbers to the front and collecting variables, we get: $(9)(5)(\frac{1}{9})aba = \frac{45}{9}a^2b = 5a^2b$.

Answer: $\mathbf{5a^2b}$

4. $(10w)(0.1)(2w) = ?$

There are no negative signs, so that's nice. Okay, let's move the numbers up to the front, and squish the variables:

$(10)(0.1)(2)ww = (10)(0.1)(2)w^2$, and remember, that multiplying by 10 means we can just move the decimal point one place to the right, so $(10)(0.1) = 1$.

So: $(10)(0.1)(2)w^2 = 2w^2$

Answer: $\mathbf{2w^2}$

5. $(163v)(0)v(6x) = ?$ Hm, so, collecting numbers to the front, we get... wait a minute, "0" is one of our numbers, and we know that 0 times anything equals 0, so the whole thing becomes 0!

Answer: **0**

DTM from p.119

2. $(-2)(-x)(y) + \frac{yz}{y}$

There are two terms here, so first let's just look at the first one: $(-2)(-x)(y)$. We count two negative signs, which means they go away! Squishing this, it becomes: $2xy$. Now

let's look at our second term: $\frac{yz}{y}$. We've been told we can assume *y* does not equal 0, so let's go ahead and treat *y* like any other common factor in a fraction, and cancel one from the top and bottom: $\frac{yz}{y} = \frac{\cancel{y}z}{\cancel{y}} = \frac{z}{1} = z$.

So our full answer is: $(-2)(-x)(y) + \frac{yz}{y} = 2xy + z$.

Answer: **$2xy + z$**

3. $\frac{-10(-a)}{(-5)ab}$

Here we have a single term with only multiplication and division as operations. (The negative signs only represent negative numbers, not subtraction! And you can tell by the placement of the parentheses surrounding them). We count a total of 3 negative signs, which means there will be one left over. So we can get rid of the extra ones, and this can be rewritten as: $-\frac{10a}{5ab}$. That makes things a little cleaner, doesn't it? Let's cancel a factor of 5 from the top and bottom, and also a factor of "a." So this becomes: $-\frac{^{2}\cancel{10}\,\cancel{a}}{\cancel{5}\,\cancel{a}b} = -\frac{2}{b}$

Answer: $-\frac{\mathbf{2}}{\boldsymbol{b}}$

4. $\frac{-9c(-d)}{3d} \div \frac{c}{(-2)}$ *(Hint: see the example on p.117)*

Remember, dividing by a fraction is the same as multiplying by its reciprocal. So

$$\frac{-9c(-d)}{3d} \div \frac{c}{(-2)} = \frac{-9c(-d)}{3d} \times \frac{-2}{c}$$

And remember that multiplying two fractions means you multiply across the top and also across the bottom, so: $\frac{-9c(-d)}{3d} \times \frac{-2}{c} = \frac{-9c(-d)(-2)}{3dc}$

So far so good? From this point, let's count the negative signs: there are 3 of them total, so we know the answer will be negative, and we can write it like this: $-\frac{9c(d)(2)}{3dc}$

Notice there is a factor of c on the top and bottom, and also d on the top and bottom, and these cancel, so we get: $-\frac{9\cancel{c}\,\cancel{(d)}(2)}{3\cancel{d}\,\cancel{c}} = -\frac{18}{3} = -6$. Voila! So, as long as *c* and *d* are both not zero (which was indeed said at the beginning of the "Doing the Math"), then:

$$\frac{-9c(-d)}{3d} \div \frac{c}{(-2)} = -6.$$

Answer: **–6.**