$((x / 512) \,\%\, 64) + 384$, Cannot use $+, -, *, /, \div$

(div)

By definition, $\div$ is a right shift (mult is a left shift))

So $x / 512 = x >> 9$

Why 9? => 512 in binary is $2^9 = 1000000000$

How to do % (mods):

Try values to find a relationship in terms of AND, OR, XOR, NAND, etc...

64 in binary is $1\,0\,0\,0\,0\,0\,0 = 64$

$1\,0\,0\,0\,0\,0\,1 = 65$

$0\,0\,0\,0\,0\,0\,1$

65 mod 64 = 1, so you want above to give you 1

64 mod 64 = 0, so you want the following to give you 0.

64 in binary is $1\,0\,0\,0\,0\,0\,0 = 64$

$1\,0\,0\,0\,0\,0\,0 = 65$

$0\,0\,0\,0\,0\,0\,0$

Therefore, I find that modding something with 64 is giving me a 1 only when bits differ (look at highlight), that sounds a lot like XOR

So $(x/512) \,\%\, 64 = (x >> 9) \wedge 64$ (XOR)

Adding is typically represented by an OR

→ Again, Trial & Error

$1\,0\,0\,0\,1$ OR $0\,1\,0\,1\,0$ → looks like adding!

$1\,1\,0\,1\,1$

So $(x/512) \,\%\, 64 = ((x >> 9) \wedge 64) \mid 384$