

**FAULTY MATH IN NEW COCAINE BASE
EQUIVALENCY TABLE**

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Converting Crack Cocaine to Marijuana Under the Pre-Amendment Guidelines

Prior to the crack amendments of November 1, 2007, the ratio of crack cocaine to marijuana was 1 to 20,000 (1 gram of crack cocaine = 20 kg of marijuana). This ratio was based on the ratios found within the Base Offense Levels in the Drug Quantity Table of U.S.S.G §2K1.1(c), which can be seen by isolating the ranges of crack cocaine and marijuana within each Base Offense Level:

Table 1

Base Offense Level	Cocaine Base Amount	Marijuana Amount
38	≥ 1.5 KG	≥ 30,000 KG
36	≥ 500 - < 1.5 KG	≥ 10,000 KG - < 30,000 KG
34	≥ 150 G - < 500 G	≥ 3,000 KG - < 10,000 KG
32	≥ 50 G - < 150 G	≥ 1,000 KG - < 3,000 KG
30	≥ 35 G - < 50 G	≥ 700 KG - < 1,000 KG
28	≥ 20 G - < 35 G	≥ 400 KG - < 700 KG
26	≥ 5 G - < 20 G	≥ 100 KG - < 400 KG
24	≥ 4 G - < 5 G	≥ 80 KG - < 100 KG
22	≥ 3 G - < 4 G	≥ 60 KG - < 80 KG
20	≥ 2 G - < 3 G	≥ 40 KG - < 60 KG
18	≥ 1 G - < 2 G	≥ 20 KG - < 40 KG
16	≥ 500 MG - < 1 G	≥ 10 KG - < 20 KG
14	≥ 250 MG - < 500 MG	≥ 5 KG - < 10 KG
12	< 250 MG	≥ 2.5 KG - < 5 KG

As Table 1 demonstrates, the marijuana equivalency for 1 gram of crack cocaine is 20 kilograms. This is true at every point in the range of amounts of crack within each Base Offense Level. Thus, for example, under the pre-amendment Drug Quantity Table, 5 grams of crack fell at the bottom end of Base Offense Level 26. The same was true for 100 kilograms of marijuana. 100 kilograms of marijuana is the product of 20 kilograms and 5. This ratio held throughout the quantity of crack falling within the pre-amendment Base Offense Level 26. Thus, at the high end of the ranges for crack and marijuana within pre-amendment Base Offense Level 26, the ratio was still 1

to 20,000, or 20 grams of crack to 400 kilograms of marijuana.

Basing the ratio of crack to marijuana on the ranges of amounts within each Base Offense Level kept the equivalency neat and uniform throughout the discrete Base Offense Levels and throughout the entire Drug Quantity Table. This meant that no matter what quantity of crack cocaine within a particular offense range was attributed to the defendant, the marijuana equivalency would always keep the defendant within the same Base Offense Level. Thus, the defendant who was accountable for 18 grams of crack, which is toward the high end of the crack range falling in Base Offense Level 26, would also start with a marijuana equivalency falling within Base Offense Level 26. In other words, simply converting the amount of crack to marijuana never altered the defendant's Base Offense Level. Of course, the quantities of other drugs for which the defendant was accountable may have moved the defendant out of the same Base Offense Level, but simply converting the crack to marijuana always kept the defendant in the same Base Offense Level.

The Inherent Problems Produced by the November 1, 2007 Crack Amendments

On November 1, 2007, the Sentencing Commission amendments promulgated by the Commission and submitted to Congress on May 1, 2007 became effective. In relevant part, the Commission amended the Drug Quantity Table of U.S.S.G. §2D1.1(c) by reducing the Base Offense Level for the same crack cocaine ranges by two levels. Thus, for example, instead of yielding a Base Offense Level of 26 for the crack amount falling within the 5- to less than 20-gram range, the Base Offense Level is now 24 for the same range. Although the crack ranges were lowered by two levels, the Commission kept the same marijuana ranges for each Base Offense Level. This is shown in the Table below:

Table 2

Base Offense Level	Cocaine Base Amount	Marijuana Amount
38	≥ 4.5 KG	≥ 30,000 KG
36	≥ 1.5 KG - < 4.5 KG	≥ 10,000 KG - < 30,000 KG
34	≥ 500 G - < 1.5 KG	≥ 3,000 KG - < 10,000 KG
32	≥ 150 G - < 500 G	≥ 1,000 KG - < 3,000 KG
30	≥ 50 G - < 150 G	≥ 700 KG - < 1,000 KG
28	≥ 35 G - < 50 G	≥ 400 KG - < 700 KG
26	≥ 20 G - < 35 G	≥ 100 KG - < 400 KG
24	≥ 5 G - < 20 G	≥ 80 KG - < 100 KG

22	≥ 4 G - < 5 G	≥ 60 KG - < 80 KG
20	≥ 3 G - < 4 G	≥ 40 KG - < 60 KG
18	≥ 2 G - < 3 G	≥ 20 KG - < 40 KG
16	≥ 1 G - < 2 G	≥ 10 KG - < 20 KG
14	≥ 500 MG - < 1 G	≥ 5 KG - < 10 KG
12	< 500 MG	≥ 2.5 KG - < 5 KG

As a consequence of lowering the crack ranges by two levels and keeping the marijuana ranges the same at each Base Offense Level, the ratio of crack to marijuana within each range is no longer 1 to 20,000. Instead, the ratios are now purportedly set forth in the new table found at U.S.S.G. §2D1.1, advisory note 10(D):

Table 3

Base Offense Level	Conversion Factor (per gram of crack)
38	6.7 kg of marihuana
36	6.7 kg of marihuana
34	6 kg of marihuana
32	6.7 kg of marihuana
30	14 kg of marihuana
28	11.4 kg of marihuana
26	5 kg of marihuana
24	16 kg of marihuana
22	15 kg of marihuana
20	13.3 kg of marihuana
18	10 kg of marihuana
16	10 kg of marihuana
14	10 kg of marihuana
12	10 kg of marihuana

As even a cursory look at this table reveals, the varying ratios of crack to marijuana between Base Offense Levels are grossly inequitable. How can it be that the ratio of crack to marijuana is 1:5,000 for a defendant who possesses up to 35 grams of crack cocaine in Base Offense Level 26, but the ratio is 1:16,000 for the defendant who possesses 5 grams of crack in Base Offense Level 24? Unfortunately, the Commission provides no rationale for this disparity.

Furthermore, the application of these conversion factors to the quantities found within each Base Offense Level present a deeper problem at the practical level. As applied, the new crack to marijuana ratios are imprecise and fail to adequately account for the range of crack amounts within each respective Base Offense Level. Instead, as best as can be discerned, the new ratios have been set to account for the bottom end of each new Base Offense Level. For example, the crack range at Base Offense Level 24 is now 5 to 20 grams, and the marijuana range is 80 to 100 kilograms. Applying the new ratio for Base Offense Level 24, which is 16, to the bottom end of the crack range yields 80 kilograms of marijuana. However, applying the same ratio to the high end of the crack range, less than 20 grams, produces a marijuana equivalency of less than 320 kilograms, which jumps the defendant to a Base Offense Level 26, even before calculating any other drugs for which the defendant may be accountable. Below is a chart showing the range of marijuana quantity when applying the Commission’s new conversion factor alongside the marijuana amounts written for each base offense level.

Table 4

Base Offense Level	Conversion Factor	Marijuana Quantity Range When Applying New Ratio	Marijuana Quantity Range for Base Offense Level
38	6.7	≥ 30,150 KG	≥ 30,000 KG
36	6.7	≥ 10,050 KG - < 30,150 KG	≥ 10,000 KG - < 30,000 KG
34	6	≥ 3,000 KG - < 9,000 KG	≥ 3,000 KG - < 10,000 KG
32	6.7	≥ 1,005 KG - < 3,350 KG	≥ 1,000 KG - < 3,000 KG
30	14	≥ 700 KG - < 2,100 KG	≥ 700 KG - < 1,000 KG
28	11.4	≥ 399 KG - < 570 KG	≥ 400 KG - < 700 KG
26	5	≥ 100 KG - < 175 KG	≥ 100 KG - < 400 KG
24	16	≥ 80 KG - < 320 KG	≥ 80 KG - < 100 KG
22	15	≥ 60 KG - < 75 KG	≥ 60 KG - < 80 KG
20	13.3	≥ 39.9 KG - < 53.2 KG	≥ 40 KG - < 60 KG

18	10	≥ 20 KG - < 30 KG	≥ 20 KG - < 40 KG
16	10	≥ 10 KG - < 20 KG	≥ 10 KG - < 20 KG
14	10	≥ 5 KG - < 10 KG	≥ 5 KG - < 10 KG
12	10	< 5 KG	≥ 2.5 KG - < 5 KG

As this Table shows, the new conversion factor produces inequalities at every Base Offense Level except 12, 14, and 16. Some inequalities run to the benefit of the defendant. For example, a defendant whose crack accountability places him/her at the high end of Base Offense Level 26 must also be accountable for 225 kilograms of marijuana, or its equivalent, before moving up to Base Offense Level 28. The inequalities that run to the benefit of the defendant are found at Base Offense Levels 18, 20, 22, 26, 28, and 34.

Other inequalities adversely affect the defendant. For example, a defendant whose crack accountability places him/her in a Base Offense Level 24 will be thrust into Base Offense Level 26 when held accountable for 6.25 grams or more of crack. The inequalities that adversely affect the defendant are found at Base Offense Levels 24, 30, 32, and 36.

The Table below lists the lowest amount of crack needed to propel the defendant into the next Base Offense Level alongside the crack ranges within each Base Offense Level in which the defendant is adversely affected.

Table 5

Base Offense Level	Crack Range	Lowest Quantity Needed to Propel Defendant to Next Offense Level
36	≥ 1.5 KG - < 4.5 KG	4,477.61 G
32	≥ 150 G - < 500 G	447.76 G
30	≥ 50 G - < 150 G	71.43 G
24	≥ 5 G - < 20 G	6.25 G

So, for example, a defendant who is accountable for 6.25 grams of cocaine will be propelled into a Base Offense Level 26 even before calculating the marijuana equivalency of other drugs.

Fixing the Inequalities Inherent in the Commission’s Crack to Marijuana Conversion Table.

As noted above, the new conversion factors for crack to marijuana do not produce uniform results along the ranges of crack amounts within each Base Offense Level. Consequently, there is no single ratio that pertains throughout the range of crack amounts within each Level. One way to fix this problem is to apply an algebraic formula to the crack for which a defendant is held accountable. The Table below shows the formulae that could be used to keep the conversion from crack to marijuana consistent within each Level. This is done by accounting for the spectrum of ratios of crack to marijuana found within each Base Offense Level. Within each formula, x equals the amount of crack for which the defendant is accountable. For Base Offense Level 36, keep the amount of crack in kilograms. For Base Offense Level 34, unless already given, convert the amount of crack to grams. For Base Offense Levels 32, 30, 28, 26, 24, 22, 20 and 18, keep the quantity of crack in grams. The formula will convert the amount of marijuana to kilograms.

Table 6

Base Offense Level	Conversion Formula
38	N/A
36	$20,000/3(x-1.5) + 10,000$
34	$7(x-500) + 3,000$
32	$40/7(x-150) + 1,000$
30	$3(x-50) + 700$
28	$20(x-35) + 400$
26	$20(x-20) + 100$
24	$4/3(x-5) + 80$
22	$20(x-4) + 60$
20	$20(x-3) + 40$
18	$20(x-2) + 20$

Here is an example of how one formula could be applied in a real case. A defendant was held accountable for 18.1 grams of crack and 3.9 grams of powder cocaine. Under the pre-amendment guidelines, the defendant's crack amount would be converted to 362 kilograms of marijuana and his powder cocaine converted to 780 grams. The total amount of drugs converted to 362.780 kilograms of marijuana. This equivalency placed the defendant at Base Offense Level 26. Using the post-amendment conversion factor, however, lands the defendant in the same Base Offense Level. This is because the defendant would receive an initial two-point reduction for the crack amount, from Base Offense Level 26 to 24. At a Base Offense Level 24, the guidelines advise to multiply the amount of crack by 16 kilograms of marijuana. The product of this multiplication is

289.6. As a result, the defendant is catapulted to a Base Offense Level 26 even before adding the powder amount. Consequently, the defendant receives no benefit from the Commission's crack amendment.

Applying the above formula for Base Offense Level 24, however, keeps the defendant in a Base Offense Level 24:

$$\begin{aligned} &4/3(x-5) + 80 = \\ &4/3(18.1-5) + 80 = \\ &4/3(13.1) + 80 = \\ &17.46 + 80 = \\ &97.46 \text{ kilograms of marijuana} \end{aligned}$$

The guidelines advise to multiply the quantity of powder cocaine by 200 grams of marijuana:

$$\begin{aligned} &3.9 \text{ grams} \times 200 \text{ grams} = \\ &780 \text{ grams of marijuana} \end{aligned}$$

The guidelines then advise to add the two marijuana amounts:

$$\begin{aligned} &97.46 \text{ kilograms} + 780 \text{ grams} = \\ &98.240 \text{ kilograms of marijuana} \end{aligned}$$

98.24 kilograms of marijuana falls within the marijuana range set forth at Base Offense Level 24. Therefore, applying the above formula to the Drug Quantity Table keeps the defendant in Base Offense Level 24.

The inelegance of this Table alone points to the inadequacy of the new conversion ranges within each Base Offense Level. A further, and perhaps more troubling problem is found within the structure of the ranges themselves. Although the above formulae make the ranges consistent across each Level, they produce a different inequality. Under some of these formulae, a smaller quantity of crack has a greater marijuana ratio than does a larger quantity of crack. For example, take the ranges of quantities present in Base Offense Level 24. The crack amount ranges from 5 to 20 grams and the marijuana amount ranges from 80 to 100 kilograms. To keep the defendant's marijuana conversion within the same guideline as the defendant's crack amount, the conversion from crack to marijuana produces a higher ratio at the lower end of the range. Thus, at the bottom end of the range, the ratio from crack to marijuana is 1:16,000. However, at the high end of the range, the ratio of crack to marijuana is 1:5,000. In effect, then, the Commission has implicitly stated that a defendant who possesses 5 grams of crack is more culpable than a defendant who possesses 19.99 grams of crack.

Although applying the formulae produce this anomaly, the net effect may be inconsequential. This is so because although the ratio of crack to marijuana is greater at the bottom end of the range

in Base Offense Level 24, the smaller amount of crack does not convert to a greater amount of marijuana. Therefore, the defendant who possesses a smaller amount will not receive a higher punishment than the defendant who possesses a greater amount within each Base Offense Level. Applying the formulae, then, is preferable to applying the Commission's advisory conversion table in U.S.S.G. §2D1.1, advisory note 10(D).

As this article demonstrates, the new crack to marijuana conversion method is inherently arbitrary. Although a set of formulae can be derived to account for the lack of a single ratio for every quantity of crack within each respective Base Offense Level, the result only creates a different set of problems. A defendant who possesses less crack than another defendant within some Base Offense Levels may be deemed more culpable. Furthermore, although the algebraic formulae provide a temporary fix to the problem of converting crack to marijuana within each respective Base Offense Level, the formulae do nothing to remedy the inherent inequities found when comparing the ratios of crack to marijuana between Base Offense Levels and across the Drug Quantity Table. That is, even when applying the formulae within each Base Offense Level, the disparity of ratios between Base Offense Levels found in the conversion table of U.S.S.G. §2D1.1, advisory note 10(D), still persist. The only true fix is to recalculate the crack to marijuana conversion to produce a single, uniform ratio across each Base Offense Level and across the entire Drug Quantity Table. Doing so, however, will require resetting the range of crack amounts within each Base Offense Level.