

$$X \equiv 1 \pmod{8}$$

$$X \equiv 1 \pmod{9}$$

$$X \equiv 2 \pmod{11}$$

$$X \equiv 0 \pmod{13}$$

$$M = 8 * 9 * 11 * 13 = 10296$$

$$m_1 = \frac{10296}{8} = 1287$$

$$m_2 = \frac{10296}{9} = 1144$$

$$m_3 = \frac{10296}{11} = 936$$

$$m_4 = \frac{10296}{13} = 792$$

$$m_1^{-1} = 1287 * 7 \equiv 1 \pmod{8}$$

$$m_2^{-1} = 1144 * 1 \equiv 1 \pmod{9}$$

$$m_3^{-1} = 936 * 1 \equiv 1 \pmod{11}$$

$$m_4^{-1} = 792 * 12 \equiv 1 \pmod{13}$$

$$X = ((1 * 1287 * 7) + (1 * 1144 * 1) + (2 * 936 * 1) + (0 * 792 * 12)) \pmod{10296}$$

$$X = (12025) \pmod{10296}$$

$$\mathbf{X = 1729 + 10296k}$$