5A: $3\cdot x^{\alpha}$, $2\cdot y^{\beta}$, z^{γ}, $2^{k}\cdot 3^{l}$

x = 5, y = 7, z = 11: $2\cdot 7^{\beta} = 11^{\gamma} - 1 = 10\cdot(11^{\gamma-1} + ... + 1)$ is divisible by 5, contradiction.

x = 5, y = 11, z = 7: $2\cdot 11^{\beta} = 7^{\gamma} - 1 = 6\cdot(7^{\gamma-1} + ... + 1)$ is divisible by 3, contradiction.

x = 7, y = 5, z = 11: Both $3\cdot 7^{\alpha} + 3 = 2^{k}\cdot 3^{l}$ and $3\cdot 7^{\alpha} - 3 = 3\cdot(7^{\alpha} - 1) = 3\cdot 6\cdot(7^{\alpha-1} + ... + 1)$ are divisible by 9, contradiction. (We may and do assume $l \geq 2$: indeed $l = 1$ implies $7^{\alpha} + 1 = 2^{k}$, something that might only happen for $\alpha = 1$ and $k = 3$, leading to $2\cdot 5^{\beta} = 22$ and $11^{\gamma} = 23$.)

x = 7, y = 11, z = 5: $2\cdot 11^{\beta} = 5^{\gamma} - 1 = 4\cdot(5^{\gamma-1} + ... + 1)$ is divisible by 2^2, contradiction.

x = 11, y = 5, z = 7: $2\cdot 5^{\beta} = 7^{\gamma} - 1 = 6\cdot(7^{\gamma-1} + ... + 1)$ is divisible by 3, contradiction.

x = 11, y = 7, z = 5: $2\cdot 7^{\beta} = 5^{\beta} - 1 = 4\cdot(5^{\beta-1} + ... + 1)$ is divisible by 2^2, contradiction.