

#### 4A: $x^\alpha, 2^k \cdot 3^l, y^\beta, 2 \cdot z^\gamma$

$x = 5, y = 7, z = 11$ :  $2^k \cdot 3^l = 2 \cdot 11^\gamma - 2 = 2 \cdot (11^\gamma - 1) = 2 \cdot 10 \cdot (11^{\gamma-1} + \dots + 1)$  is divisible by 5, contradiction.

$x = 5, y = 11, z = 7$ :  $2^k \cdot 3^l = 11^\beta - 1 = 10 \cdot (11^{\beta-1} + \dots + 1)$  is divisible by 5, contradiction.

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

$x = 7, y = 11, z = 5$ : as in case  $x = 7$  or in case  $y = 11$  above.

$x = 11, y = 5, z = 7$ :  $5^\beta - 3 = 11^\alpha - 1 = 10 \cdot (11^{\alpha-1} + \dots + 1)$  is divisible by 5, contradiction.

$x = 11, y = 7, z = 5$ :  $2 \cdot 5^\gamma - 4 = 11^\alpha - 1 = 10 \cdot (11^{\alpha-1} + \dots + 1)$  is divisible by 5, contradiction.