newtype Prime a = Prime a deriving Show

instance (Integral a, Arbitrary a) => Arbitrary (Prime a) where

  arbitrary = do

    x <- frequency [ (30, choose (0, 1000))

                   , (30, choose (1001, 2000))

                   , (40, choose (2001, 3000))

                   ]

    return $ Prime (primes !! x)