

$$bq + bq^2 + bq^3 + \dots + bq^{20} = 244(bq + \dots + bq^{10})$$

$$\frac{b(1 - q^{20})}{1 - q} = 244 \frac{b(1 - q^{10})}{1 - q}$$

$$1 - q^{20} = 244(1 - q^{10})$$

$$x = q^{10}$$

$$x^2 - 244x + 243 = 0$$

$$(x - 1)(x - 243) = 0$$

$$x = 1 \Rightarrow q = 1$$

$$x = 243 \Rightarrow q = \sqrt[10]{3^5} = \sqrt{3}$$