

Exercise 2

Задача 1 Разложить $\frac{a}{b \cdot c}$ в целую дробь двумя способами, где $a = 2002$, $b = 4$, $c = 6$

$$1) \frac{2002}{4 \cdot 6} = \frac{1001}{12} = 83 + \frac{5}{12} = 83 + \frac{1}{\left(\frac{12}{5}\right)} = 83 + \frac{1}{2 + \frac{2}{5}} =$$

$$= 83 + \frac{1}{2 + \frac{1}{\left(\frac{5}{2}\right)}} = 83 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}} = [83, 2, 2, 2]$$

$$2) \frac{2002}{4 \cdot 6} = \frac{1001}{12} = 83 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}} = [83, 2, 2, 2]$$

$$1001 = 83 \cdot 12 + 5$$

$$12 = 2 \cdot 5 + 2$$

$$5 = 2 \cdot 2 + 1$$

$$2 = 2 \cdot 1$$

Задача 2 $\sqrt{b \cdot c}$ - разложить в периодическую целую дробь, где $b = 4$, $c = 6$

$$\sqrt{4 \cdot 6} = \sqrt{24} = 4 + (\sqrt{24} - 4) = 4 + \frac{1}{\left(\frac{1}{\sqrt{24} - 4}\right)} = 4 + \frac{1}{\left(\frac{\sqrt{24} + 4}{8}\right)} =$$

$$= 4 + \frac{1}{1 + \frac{\sqrt{24} - 4}{8}} = 4 + \frac{1}{1 + \frac{1}{\left(\frac{8}{\sqrt{24} - 4}\right)}} = 4 + \frac{1}{1 + \frac{1}{\left(\frac{8(\sqrt{24} + 4)}{8}\right)}} =$$

$$= 4 + \frac{1}{1 + \frac{1}{8 + (\sqrt{24} - 4)}} = [4, 1, 8]$$