Исходные данные: $a = 2002,\ b = 9,\ c = 19.$

Задание 1.

Исходная дробь: $\frac{2002}{171}$

Первый способ:

$2002 = 171 \cdot 11 + 121;$

$171 = 121 \cdot 1 + 50;$

$121 = 50 \cdot 2 + 21;$

$50 = 21 \cdot 2 + 8;$

$21 = 8 \cdot 2 + 5;$

$8 = 5 \cdot 1 + 3;$

$5 = 3 \cdot 1 + 2;$

$3 = 2 \cdot 1 + 1;$

$2 = 1 \cdot 2.$

$\frac{2002}{171} = [11; 1; 2; 2; 2; 1; 1; 1; 2].$

Второй способ:

$$\frac{2002}{171} = 11 + \frac{121}{171} = 11 + \frac{1}{\left(\frac{171}{121}\right)} = 11 + \frac{1}{1+\left(\frac{50}{121}\right)} = 11 + \frac{1}{1+\frac{1}{\left(\frac{121}{50}\right)}} =$$

$$= 11 + \frac{1}{1+\frac{1}{2+\frac{21}{50}}} = 11 + \frac{1}{1+\frac{1}{2+\frac{1}{\left(\frac{50}{21}\right)}}} = 11 + \frac{1}{1+\frac{1}{2+\frac{1}{2+\frac{8}{21}}}} =$$

$$= 11 + \frac{1}{1+\frac{1}{2+\frac{1}{2+\frac{1}{\left(\frac{21}{8}\right)}}}} = 11 + \frac{1}{1+\frac{1}{2+\frac{1}{2+\frac{5}{8}}}} = 11 + \frac{1}{1+\frac{1}{2+\frac{1}{2+\frac{1}{\left(\frac{8}{5}\right)}}}} =$$

$$= 11 + \cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\frac{3}{5}}}}}} = 11 + \cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\left(\frac{5}{3}\right)}}}}} = 11 + \cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\frac{2}{3}}}}}} =$$

$$= 11 + \cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\left(\frac{3}{2}\right)}}}}}} = 11 + \cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{2}}}}}}} =$$

$$= [11; 1; 2; 2; 2; 1; 1; 1; 2].$$

Ответ: $[11; 1; 2; 2; 2; 1; 1; 1; 2]$.

Задание 2.

Исходное число: $\sqrt{19 \cdot 9} = \sqrt{171}$.

$$\sqrt{171} = 13 + \sqrt{171} - 13 = 13 + \cfrac{1}{\left(\frac{1}{\sqrt{171}-13}\right)\frac{\sqrt{171}+13}{\sqrt{171}+13}} =$$

$$= 13 + \cfrac{1}{\left(\frac{\sqrt{171}+13}{2}\right)} = 13 + \cfrac{1}{13+\frac{\sqrt{171}-13}{2}} = 13 + \cfrac{1}{13+\cfrac{1}{\left(\frac{2}{\sqrt{171}-13}\right)\frac{\sqrt{171}+13}{\sqrt{171}+13}}} =$$

$$= 13 + \cfrac{1}{13+\cfrac{1}{26+(\sqrt{171}-13)}} = [13; \overline{13; 26}]$$

Ответ: $[13; \overline{13; 26}]$