Gymnasium Pegnitz
Wiederholung JS 6 1. Juli 2007

Periodische Dezimalbrüche (Lösungen)

1. (a) $0{,}\overline{7} = \frac{7}{9}$

   (b) $0{,}\overline{03} = \frac{3}{99} = \frac{1}{33}$

   (c) $0{,}0\overline{93} = 0{,}\overline{93} : 10 = \frac{93}{990} = \frac{31}{330}$

2. $3{,}724\overline{42}$ Periodenlänge 2; $21{,}21213\overline{21}$ Periodenlänge 2;
   $36{,}724\overline{42}$ Periodenlänge 2; $7{,}21213\overline{21}$ Periodenlänge 2

3. (a) $0, \overline{45}$; $0, \overline{36}$ (b) $\frac{77}{225}$

4. (a) $2\frac{4}{37}$; $3\frac{3}{37}$

   (b) $2, \overline{07}$; $1, \overline{02}$

5. (a) $2{,}020\overline{2} = \frac{9091}{4500}$, $2{,}02\overline{02} = \frac{200}{99}$, $\frac{2{,}020\overline{2}}{2{,}02\overline{02}} = \frac{100001}{100000} = 1{,}00001$

   (b) $0{,}\overline{999000}$

6. $\frac{12}{55} = 0{,}2\overline{18}$

7. (a) $\frac{29}{90} = 0{,}3\overline{2}$ (b) $\frac{22}{135} = 0{,}1\overline{629}$

8. (a) 14,2255 (b) $1{,}1\overline{3}$ (c)10

9. (a) 50 700 (b) 0,000503

10. (a) $0{,}12\overline{34}$

    (b) $\frac{37}{100} + \frac{12}{9900} = \frac{37 \cdot 99 + 12}{9900} = \frac{3663 + 12}{9900} = \frac{3675}{9900} =$

    $= \frac{3 \cdot 5 \cdot 5 \cdot 7 \cdot 7}{3 \cdot 3 \cdot 11 \cdot 2 \cdot 5 \cdot 2 \cdot 5} = \frac{49}{132}$

11. $0{,}708\overline{3} = 708{,}\overline{3} : 1000 = 708\frac{1}{3} : 1000 = \frac{708 \cdot 3 + 1}{3000} = \frac{2125}{3000} = \frac{17}{24}$