

EXERCISES (SOLUTIONS): DECIMALS

1. It is not finite. It is recurrent.
2. $1/13=0.\overline{076923}$; $26/23=1.\overline{1304347826086956521739}$
3. $147/20=735/100=7.35$ exact decimal; $51/24=2125/100=2.125$ exact decimal;
 $4/800=5/1000=0.005$ exact decimal; $4/7=0.\overline{571428}$ pure recurring decimal;
 $7/4=175/100=1.75$ exact decimal; $4/22=0.\overline{18}$; $11/45=0.\overline{24}$; $5/5=10/10=1$ exact decimal; $4/1=40/10=4$ exact decimal.
4. $1.2345 < 1.\overline{2345} < 1.\overline{2345} < 1.\overline{2345} < 1.\overline{2345}$
5. For example, 1.23451 , 1.2345001 , 1.23455 , $1.\overline{2345}$, $1.\overline{2345}$, 1.23453
For example, 6.543205 , 6.5432007 , 6.543209 , $6.54320\overline{1}$, $6.54320\overline{1}$, $6.543200\overline{7}$
6. a) 45 hundredths, b) 23 tenths, c) 2 hundredths, d) 0.05 thousandths.
7. The sum and the product of two exact decimal numbers is always an exact decimal number. The quotient is not always a decimal number.
The sum of one decimal number and one recurrent decimal number can be whether an exact or a recurrent decimal number.
 $0.\overline{9}+1.\overline{9}=3$
8. It depends on the precision of the calculator: in general they show the same result which is 0.500851968. They are not the same number because the corresponding fractions are not equal: $33215/66317 < 104348/208341$.
9. In $3/11$ it is a 7; in $3/14$ it is a 1.
10. $38251/16500$
11. For example, 0.33
12. For example, 2.142
13. $26/25$; $2581/1000$; $1/2000$; $41/333$; $1/150$; $111113/900$
14. a) 0.75kg; b) 12.5euros each vase; c) 0.75 cents; d) 1.325 cents; e) 1176.470588 steps; f) $\overline{0.540}$ kg; g) 300 km; h) 1.6 euros/kg; i) 0.7 times.
15. She has respected her diet since she has eaten 578.9 calories.
16. 3.25 euros.
17. 216 euros.
18. 29.28 euros.
19. 197.4 euros.
20. 562.925 euros.