

Arithmetic and Combinatorics

Training problems for M1 2018 term 1

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1 Euclidean division

1. Who was Euclid and where was he from?
2. Label the parts of these expressions with the terms *dividend*, *divisor*, *remainder*, *quotient*.
 - (a) $101/39$.
 - (b) $m = q \times d + r, 0 \leq r < d$.
 - (c) $59 = 5 \times 11 + 4$.
 - (d) $a = b \times c + d, 0 \leq d < c, d > b$.
 - (e) $r \div s$.
3. Which number is the divisor and which one is the quotient?
 - (a) $42 = 11 \times 3 + 9$.
 - (b) $99 = 7 \times 13 + 8$.
 - (c) $69 = 10 \times 6 + 9$.
 - (d) $23 = 4 \times 5 + 3$.
4. Do by Euclidean division. Label all the parts of your expressions. Give a clear answer in terms of two numbers.
 - (a) $99/91$.
 - (b) $919/7$.
 - (c) $1001/651$.
 - (d) $1/19$.
 - (e) $19/1$.
 - (f) $17/17$.
 - (g) $0/15$.
 - (h) $15/0$.