2_q

Monday, December 2, 2024 8:30 AM

Question 2 23K-0800

(a)

i) $q = -111 \text{ div } 99 = -1$

$r = -111 \text{ mod } 99 = -12$

ii) $q = -9999 \text{ div } 101 = -99$

$r = -9999 \text{ mod } 101 = 0$

iii) $q = 10299 \text{ div } 999 = 10$

$r = 10299 \text{ mod } 999 = 309$

iv) $q = 123456 \text{ div } 1001 = 123$

$r = 123456 \text{ mod } 1001 = 333$

(B)

i) 80

$80 \text{ mod } 17 = 12$

$12 \neq 5$

ii) $103 \text{ mod } 17 = 1$

$1 \neq 5$

iii) $-29 \text{ mod } 17 = 5$

for positive remainder $= -29 + (17-2)$

iv) $-122 \text{ mod } 17 = 14$ for positive remainder $= -121 + (17-8)$

$14 \neq 5$