BMC Beginners II
Modular Arithmetic

Name: _____
Date: _____

Euclidean Division

Divide, find the quotient and remainder, then write an equation of the form a = q*b + r.

ex) 1
5⌐9 9 = 1*5 + 4
- 5
4

4⌐15 15 = __*4 + __

12⌐13

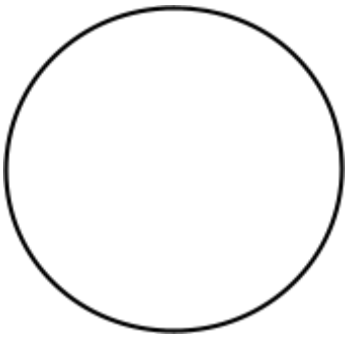
6⌐9

4⌐21

12⌐25

Clock Math

Draw in a "clock", in the **mod 5** world, to help you solve the arithmetic questions.



ex) 3 + 3 = 1 (mod 5)

3 + 2 = __ (mod 5)

3 + 1 = __ (mod 5)

6 + 2 = __ (mod 5)

1 - 0 = __ (mod 5)

4 + 1 = __ (mod 5)

3 - 4 = __ (mod 5)

1 + 2 = __ (mod 5)

1 - 5 = __ (mod 5)

Equivalence (mod m)

List four numbers that are equivalent to the given number **mod 7**.

ex) 5 = {-2,5,12,19}

0 = { , , , }

1 = { , , , }

2 = { , , , }

-2 = { , , , }

Is 5 = 2 (mod 2)? How about (mod 3)?

Is 6 = 3 (mod 2)? How about (mod 3)?

Using only the integers {0,1,2,3,4,5,6,7,8}, fill in the table for the additive inverses of each number in the **mod 9** world.

Number	0	1	2	3	4	5	6	7	8
Inverse	0								1