1. Give standard representations for each arithmetic problem (preferably without a calculator):

$2 + 3 \pmod{21}$

$\boxed{5}$

$2 \times 3 \pmod{21}$

$\boxed{6}$

$20 + 30 \pmod{21}$

$\overset{\shortparallel}{-1} + \overset{\shortparallel}{9} = \boxed{8}$

or $\cdot 50 - 21 - 21 = \boxed{8}$

$20 \times 30 \pmod{21}$

$\overset{\shortparallel}{-1} \times \overset{\shortparallel}{9} = -9 = -9 + 21 = \boxed{12}$

$6 \times 3 \pmod{5}$

$\overset{\shortparallel}{1} \times 3 = \boxed{3}$

$22 \times 17 \pmod{21}$

$\overset{\shortparallel}{1} \times \overset{\shortparallel}{17} = \boxed{17}$

$181 + 212 \pmod{10}$

$\overset{\shortparallel}{1} + \overset{\shortparallel}{2} = \boxed{3}$

$181 + 212 \pmod{100}$

$\overset{\shortparallel}{81} + \overset{\shortparallel}{12} = \boxed{93}$

$181 \times 212 \pmod{10}$

$\overset{\shortparallel}{1} \times \overset{\shortparallel}{2} = \boxed{2}$

$181 \times 212 \pmod{20}$

$\overset{\shortparallel}{1} \times \overset{\shortparallel}{12} = \boxed{12}$

2. For each number from 1 to 5, decide whether it is zero, a zero divisor, or a unit mod 5

×	1	2	3	4	5	
1	①	2	3	4	5	unit
2	2	4	①	3	5	unit
3	3	①	4	2	5	unit
4	4	3	2	①	5	unit
5	5	5	5	5	5	zero

3. List 3 different units mod 20   **1, 3, 7**

$1 \times 1 = 1$ unit

$2 \times 10 = 20 = 0$ zero divisor

$③ \times ⑦ = 21 = 1$ unit

Secret: -1

4. Find a partner. Secretly (from your partner) write down a number between -5 and 5 (not 0). Have your partner do the same. Take your number and (secretly) multiply it by 6. Tell your partner the **standard representative** of your number (mod 11).

Write down what your partner said here: 7

Secret: -6

Now take what your partner said, multiply it by your first secret number, and write down its standard representative (mod 11). Keep your work secret, but write down the answer here: ~~We both said~~ 4

Secret: $(-1)(7) = -7 = \boxed{4}$

When your partner is ready, together say "1, 2, 3," and then say your last answer out loud.

We both said ④