

Homework 5

- ③ $120 = 2mn$, $120 = 2mn$, $60 = mn$
 60 factors: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

m: 1, 2, 3, 4, 5, 6
 n: 60, 30, 20, 15, 12, 10

$$0 < m < n$$

<u>a</u>	<u>b</u>	<u>c</u>
170	$1^2 - 60^2$	$1^2 + 60^2$
170	$2^2 - 30^2$	$2^2 + 30^2$
170	$3^2 - 20^2$	$3^2 + 20^2$
170	$4^2 - 15^2$	$4^2 + 15^2$
170	$5^2 - 12^2$	$5^2 + 12^2$
170	$6^2 - 10^2$	$6^2 + 10^2$

- ④ Infinite positive triples

Proof:

- First is 3-4-5
- Infinite number of multiples
- We can multiply 3-4-5 by any natural number
- The set of natural numbers is infinite

⑤ Fermat

⑥ Andrew Wiles

⑦ Fermat

⑧ Gerd Faltings