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Math  
Number Theory

**Theorem:**

*For any Integer  $(a+b)/2$  exist two primes  $a, b$  with the same distance  $d$  and  $-d$  to it.*

**Proof:**

Let  $a$  and  $b$  two **even** or two **odd** Integers and  $a*b$  the product:

$$a b = \left( \frac{a+b}{2} + \frac{a-b}{2} \right) \left( \frac{a+b}{2} - \frac{a-b}{2} \right)$$

$\Rightarrow$

$$d = \frac{a-b}{2}$$

Prime numbers  $a, b$  are Integers even or odd

**q.e.d.**

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