

**EXAMPLES of AMC 10 – PROBLEMS**

1. How many pairs of positive integers  $(a;b)$  are such that  $a$  and  $b$  have no common factor greater than 1 and  $\frac{a}{b} + \frac{14a}{9b}$  is an integer.

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2. Let  $a$  and  $b$  be the roots of the equation  $x^2 - mx + 2 = 0$ .

Suppose that  $\left(a + \frac{1}{b}\right)$  and  $\left(b + \frac{1}{a}\right)$  are the roots of the equation  $x^2 - px + q = 0$

What is  $q$  ?

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