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## HMMT November Online

### Guts Round Instructions

By "lowest terms", we mean that a rational number has been written as  $\frac{m}{n}$ , where  $n$  is a positive integer,  $m$  is an integer (possibly zero or negative), and  $|m|$  and  $|n|$  share no common prime factors. In particular if the answer is an integer (possibly zero or negative), then  $n = 1$  is the only possible value of  $n$ .

1. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
3. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
6. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
8. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
10. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
15. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
16. For an answer in the form  $\frac{a+b\sqrt{c}}{d}$  where  $\sqrt{c}$  is in simplest radical form,  $a, b$  are integers, and  $d$  is a positive integer, input  $a + b + cd$ .
19. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
21. For a very large number, please represent your answer as  $c \cdot a^b$  where  $a$  and  $c$  are a positive integer less than 10. Please input  $a + b + c$ .
23. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
25. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
26. For a very large number, please represent your answer as  $a^b$  where  $a$  is a positive integer less than 10. Please input  $a + b$ .
28. For a fraction in lowest terms  $\frac{a}{b}$ , please input  $a + b$ .
32. For a very large number, please represent your answer as  $a^b$  where  $a$  is a positive integer less than or equal to 10. Please input  $a + b$ .
33. For an answer in the form  $\frac{a+b\sqrt{c}}{d}$  where  $\sqrt{c}$  is in simplest radical form,  $a, b$  are integers, and  $d$  is a positive integer, input  $a + b + cd$ .