Summary
This paper is correct in substance, reasonably well written, and is appropriate for publication in the Rose-Hulman Journal.

Math Corrections

p.1
P(-2) The solution to the 3×3 problem given is incorrect, and is, in fact, rational: $s = \frac{1}{2}$. Further, in any problem, only one square root should be used to obtain a viable solution. (Any solution must be positive and less than half the smallest dimension.) Choose different dimensions for the rectangle and correct the solution.

p.2
P(2) "We know 4 is a perfect square ..." should be 16.

p.3
Proof of Lemma 2. In the expression $\sqrt{-48 + \frac{4p}{q}}$, it should be $\frac{4p^2}{q^2}$. This occurs in two places on p.3 and one on p.4.

p.4

l.2 Correct the expression $\sqrt{-48 + \frac{4p}{q}}$ as above.

Theorem 2.1 Proof, P(3) Why is $k^2 + k + 1$ not a perfect square? It's not because it doesn't factor over the integers, as $k^2 + k + 47$ doesn't factor, but when $k = 1$ it does give a perfect square. One argument is that $k^2 < k^2 + k + 1 < (k+1)^2$.
The same argument works with the next case also, as $4k^2 + 4k + 4 = 2^2 (k^2 + k + 1)$. To be a perfect square, $k^2 + k + 1$ must be a perfect square.

P(-3) $(a = 2)$ "Substituting $a = 1$" should be "Substituting $a = 2$."

p.5

Table of values for a, b, m

In general, give only the positive values of m.

When $a = 3$ and $b = 2$, the value of m should be $\dfrac{6 - \sqrt{28}}{2}$.

Style Suggestions

p.1
Abstract. Spell out the word "two."
Wording: "... proving *that* the smallest possible distinct dimensions that *produce* a rational ..." (This occurs twice.)

P(-2) "In order to solve this ..." Add the word "problem" and a comma: "In order to solve this *problem, ...*"
Add a comma: "... not very satisfying to the student, ..."

l(-1) "student" should be singular.

p.2

P(2) Add a comma: "We know 4 is a perfect square, ..." (Also see math correction above.)
Move the comma: "... with the expression $(a + b)^2 - 3ab$, ..."

Proof of Theorem 1.1. Change "use" to "us."

There are only two open questions from reference [2] that are addressed. Correct the word "three" just before Open Question 1.

The third conjecture does not belong to [2], so change the wording: "We end with a conjecture ..."

p.3

P(2) Change "divides into 4" to "is a factor of 4."

Just before Lemma 2.2, eliminate the word "I." Change the wording, perhaps, "A search for examples suggested that a cannot be 4; indeed, we have the following result."

Lemma 2.2, proof. Put the reference number [3] before the period after "Proof."

Change the word "discriminant" to "expression." In the expression $\sqrt{-48 + \frac{4p}{q}}$, only what is under the radical sign is the discriminant. (Note also the math correction to this expression above.)

p.4
Theorem 2.1 Proof, P(2) In the solution for b, put the $\frac{1}{2}$ in front, as that is the way it appears in the next paragraph. It's easier to compare that way.

p.5

Rather than solving equation (4) numerically for one value each of a and b, plug in $a = 3$, solve algebraically for b, then evaluate the expression for all values of b that are of interest.

Reduce the solutions to simplest form for those readers who are checking the work via a computer algebra system.

p.6

line after eq. (5) Insert word: "... solution to *the* box problem ..."

P(-3) Sentence beginning "When $a = 4$ ..." refer to "Lemma 2.2", not just "2.2."

See comments for p.5 regarding equation (4) about using equation (6).

p.7
Section 4. I believe that computer searches should be documented somehow. (This is not universally practiced.) And some readers would probably appreciate an indication of the type of computer search used — i.e., software and (pseudo-)code.