Bob Blaylock

Ripley's Believe It or Not Museum
6780 Hollywood Boulevard
Hollywood, California 90028

April 20th, 1997

To whom it may concern:

My wife and I visited your museum last week. There we saw a poster, apparently a page from one of Ripley's publications, which posed a puzzle. This page stated, "Nobody can solve this puzzle. Can you?"

The puzzle states that a man drives his car at a speed of 40 MPH for an unspecified distance, turns around, and drives back to his starting point along the same route at 30 MPH, and asks what his average speed is.

The answer to the puzzle is $34\frac{2}{7}$ MPH.

Let us suppose that the unspecified distance was 120 miles one way.

On the first leg of this trip, the man drives this distance at a speed of 40 MPH. This takes 3 hours.

On the second leg, the man drives this same distance, at 30 MPH. This takes four hours.

So the man has spent 7 hours driving, and covered a total distance in that time of 240 miles. Since speed is represented as distance divided by time, this man's average speed is 240 miles divided by 7 hours., which becomes $\frac{240}{7} = 34\frac{2}{7}$.

The distance does not matter. If you use a different number for distance, and run through these same calculations, you will get the same answer. 120 was chosen because, being the least common multiple of 30 and 40, it produced intermediate results which were easy to work with.

We can solve this algebraically as follows:

Where D = the one-way distance,
$V_1$ = the speed on the first leg of the trip
$V_2$ = the speed on the second leg
...and... V = the average speed for the whole trip.

The total distance, of course, is 2D, since the same distance is covered twice.

The time is the sum of $\frac{D}{V_1}+\frac{D}{V_2}$

Thus, we get to this formula: $V=\frac{2D}{\frac{D}{V_1}+\frac{D}{V_2}}$

We can eliminate D from this formula, giving us $V=\frac{2}{\frac{1}{V_1}+\frac{1}{V_2}}$

We can merge the two lower fractions, giving this: $V=\frac{2}{\frac{V_1+V_2}{V_1V_2}}$

And finally, we can eliminate the compound fraction, giving us this: $V=\frac{2V_1V_2}{V_1+V_2}$

If we put in the original numbers of 40 and 30 MPH for $V_1$ and $V_2$, we get this: $V=\frac{2\cdot40\cdot30}{40+30}=\frac{2400}{70}=\frac{240}{7}=34\frac{2}{7}$

So there you have it; two different ways to solve the "unsolvable" puzzle displayed in your museum. Believe It or Not!

Bob Blaylock

Ripley's Believe It or Not!® HOLLYWOOD

Nov.12, 1997

Mr. Bob Blaylock,

I was recently going through a stack of letters and ran across yours. I am sorry it has taken this long for you to receive a reply regarding your letter about the unsolvable puzzle that you said you solved. Unfortunately you did not solve it, Believe It or Not! The real answer is that you cannot solve the puzzle since mathematically you cannot average an average. There is apparently a rule in mathematics that forbids the averaging of averages- Believe It or Not! If the distance is presumed or stated, obviously you could compute the average, but because it is not, you cannot! Thank you for your interest on trying to solve the puzzle It is not often we find people who challenge Ripley's findings, except for Wayne Harbor of Iowa who challenged Robert Ripley for 29 years but could never prove him wrong! Please visit us again soon.

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Sincerely,

Andrea M. Hopkins, GM

Ripley's®

Ripley's
# Believe It or Not!®
WORLD HEADQUARTERS

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November 18, 1997

Mr. Blaylock
[redacted]

Dear Mr. Blaylock:

Sir I am no mathematician. To me your answer looks good and certainly plausible. As the company's archivist I merely sent you what we had in our files; I did not attempt to do the puzzle myself. As you no doubt noticed, the cartoon in question is over 60 years old. I cannot defend Mr. Ripley's stance and do not pretend to understand how he came to his conclusion. Unfortunately, he has been dead for nearly 50 years, so it is impossible to debate your findings with him.

Bob, the best I can do is say you look right to me! In lieu of the " definite" last word, enclosed please find a museum pass which I hope you will use to visit any of our museums free as our honored guest. It is not very often Ripley is proven wrong, so enjoy your conquest.

Regards,

[redacted]

Edward T. Meyer
Vice President Exhibits & Archives

ETM/alq



Robert Ripley 1935