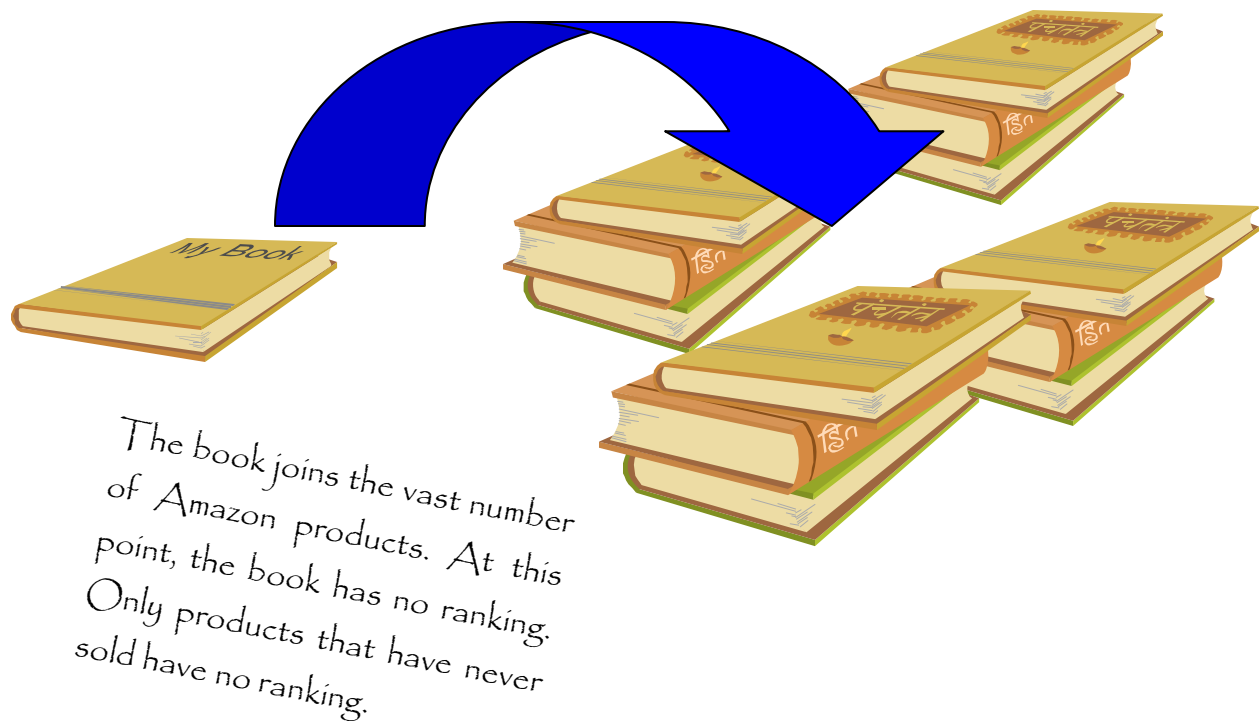


# How Amazon.com Sales Rank is Calculated

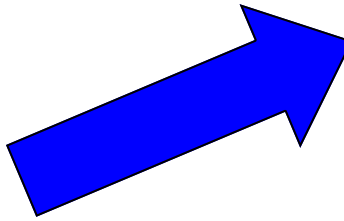
## By Timothy Fish

Some time ago I wrote an article about how Amazon.com calculates sales rank. As is often the case, I went back and reviewed what I had written and discovered that the article was not as clear as I had hoped. This article is an attempt to make it much easier to understand. The biggest problem that I saw was that the words, though correct, didn't paint a picture of what happens. Here I will attempt to show rather than tell. Isn't that what writers are supposed to do? *Show, don't tell.*

Let's look at what happens to a book that is placed on Amazon.com:



I've just got to get a copy of that book.



A customer purchases the book and now Amazon.com can determine where it fits among the other books.

Amazon.com customer

# Why Unsold Books Have No Rank

Popular Book

Hundreds of books sold per week.



Likeable Book

Tens of books sold per week.

Average Book

One books sold per month.



When we see the word *per* we know that we will be dividing the time by the number of books sold.

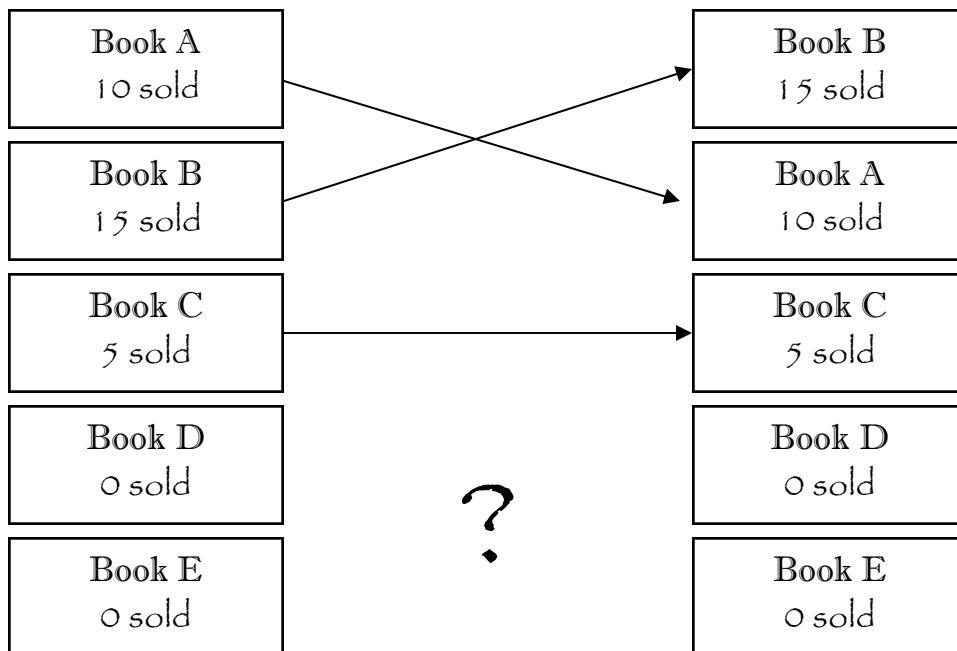
Unsold Book

Zero books sold per all time.

Division by zero error!

# Hourly Rank

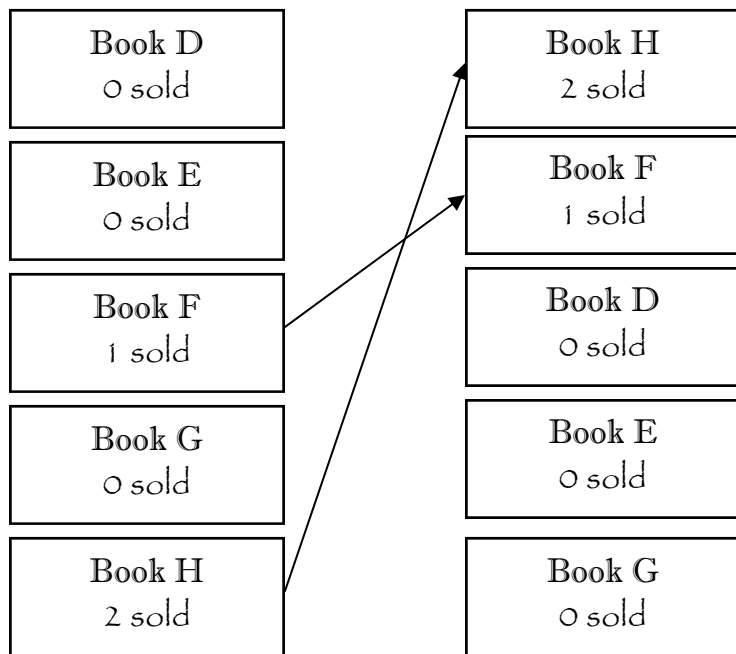
Here's where things start to get interesting. Amazon.com calculates rank on an hourly basis. Obviously, not every book sells at least one book per hour. Some books don't sell one book per month, but each previously sold book has a rank and it doesn't produce the divide by zero error.



The short answer is that they keep their old order. But life is a little more complicated than that...

It is easy to see how books A, B, and C should be ranked based on the number of books sold during the hour. But how should D and E be ranked?

# Ranking Low Volume Books



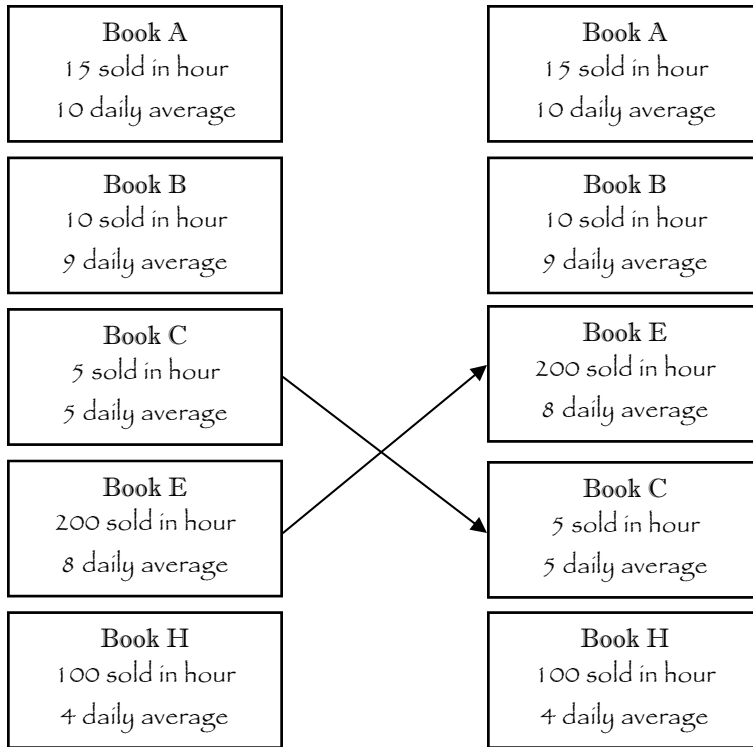
If books sold per hour is the only factor, then we have a situation like the one on the left. When a book sells, it jumps in front of all books that sold less than it during the hour and pushes everything else down.

*This is primarily what Amazon.com is doing, but it creates some problems that they want to avoid...*

Book A 15 sold in hour 10 daily average
Book B 10 sold in hour 9 daily average
Book C 5 sold in hour 5 daily average
Book E 200 sold in hour 8 daily average
Book H 100 sold in hour 4 daily average

Given the hourly sales figures and the one day average on the left, how should we rank these books if we want the most popular book on top?

*This is what can happen if an author attempts to scam the system by buying a large number of books in a one hour period. Is it in Amazon.com's best interest to move E and H to the top?*



The end result will probably look something like this. Rather than seeing rank as a measure of the number sold per hour, we should look at it as a ranking of books based on the best average in a window of time.


Amazon.com hasn't told us much about how large that window of time is or whether more than one window of time is involved.

By using this method, Amazon.com is able to reward books that do well in a one hour period while also rewarding books that are putting up consistent sales figures.

To reduce fluctuation due to day/night periods, the time window is probably some number of twenty-four hour periods

Let's look at some numbers...

For the Love of a Devil



Timothy Fish

Time to pay the piper. If you have found this information usual and would like to see more articles like this, please help me improve my Sales Rank by purchasing this book on Amazon.com.

For the Love of a Devil is inspired by the life of Hosea. In this modern retelling of that story, a beleaguered English teacher, Geoff Mywell, longs for the love he once thought his wife had for him. When she leaves him for another man, he isn't sure whether to give in to the relief of having her out of the house or be sorry that the marriage seems broken beyond repair. He goes after her as she moves from one man to the next. After she falls into prostitution, Geoff must enter the darkness and pull her back or lose the woman he loves forever.

ISBN: 1-4392-1425-5



Average Books Per Day: 540

Rank: 61



Average Books Per Day: 50

Rank: 240



Average Books Per Day: 2

Rank: 47,015



Average Books Per Day: 0.10

Rank: 245,390



Average Books Per Day: 0.002

Rank: 3,278,994

These numbers aren't real, but if they were, what would it take to get the rarely sold book at the bottom to move up?

A single sale will move it between the 47,015 book and the 245,390 book.

Two books sold in an hour will position it before 47,015 unless that book also sells two in the same hour.

Most books will steadily lose position between book sales. This is due to lesser ranked books selling and jumping ahead