Proportional Reasoning: Solutions

puzzle #1

If it takes 4 minutes for me to read 3 pages of my book, how long would it take me to read 15 pages?

If it takes 22 minutes for one sock to dry on my clothesline, how long will it take for three socks to dry?

ANSWERS TO PUZZLE 1:

It will take me five times as long to read five times the number of pages. That's 20 minutes. (But knowing me, I'll pause, and go get a snack, and then forget what I just read and will have to reread a page or two, and that will all take me much longer!)

Three socks will dry in.... 22 minutes!
So will five socks, and nine socks.
(Why do I have odd counts of socks? That's odd!)

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The NMF Weekly is written by mathematician Dr. James Tanton as a resource for friends and fans of the 2021 National Math Festival.

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puzzle #2

It takes 6 cats, 2 days, to catch 25 rats.

How many rats can eight cats catch in half a day?

ANSWER TO PUZZLE 2:

We have

6 cats <---> 2 days <---> 25 rats

Let's reduce the count of cats by three. It will take them three times as along to catch 25 rats.

2 cats <---> 6 days <---> 25 rats

Let's now quadruple the count of cats. They'll catch 25 rats on one quarter of the time, one-and-a-half days.

8 cats <---> 1.5 days <---> 25 rats

In a third of this time, half a day, these 8 cats will catch a third of the rats.

8 cats <---> 1/2 day <---> 8 1/3 rats

I am not sure what it means, but 8 cats will catch eight-and-a-third rats in half a day!