

Solution of the Week

ANSWER

Runner #1's time is G, so: $G + G/2 + G/3 + G/4 = 87.5$ seconds

↑	↑	↑	↑
#1	#2	#3	#4

My dad explained if you do something to one side of the equation, you have to do it to the other side to keep it equal.

So, I multiplied each side by 12 to get rid of the fractions: $12G + 6G + 4G + 3G = 1,050$

Next, I added up all of the G's: $25G = 1,050$

Then, I divided both sides by 25 to figure out what G is: $G = 1,050 \div 25 = 42$ seconds

So, 1st runner = $G = 42$ seconds

2nd runner = $G \div 2 = 42 \div 2 = 21$ seconds

3rd runner = $G \div 3 = 42 \div 3 = 14$ seconds

4th runner = $G \div 4 = 42 \div 4 = 10.5$ seconds

Total = $42 + 21 + 14 + 10.5 = 87.5$ seconds

Since the relay race has 4 parts, I multiplied each time by 4 to figure out how long each runner would take to run the race alone.

1st runner = $42 \times 4 = 168$ seconds or 2 minutes and 48 seconds

2nd runner = $21 \times 4 = 84$ seconds or 1 minute and 24 seconds

3rd runner = $14 \times 4 = 56$ seconds

4th runner = $10.5 \times 4 = 42$ seconds