

On Friday, three friends shared how much they read during the week.

- Barbara read the first 100 pages from a 320-page book in the last 4 days.
- Colleen read the first 54 pages from a 260-page book in the last 3 days.
- Nancy read the first 160 pages from a 480-page book in the last 5 days.

Part A

A person's average reading rate can be defined as the number of pages read divided by the number of days. Place the three friends' reading rates in order from greatest to least by clicking on the names and dragging them to the appropriate boxes.

Greatest Rate
(pages per day)

Least Rate
(pages per day)

Barbara

Colleen

Nancy

Part B

If the three friends continue to read everyday at their rates, who will finish reading her book first? Second? Third?

Order the students from the first one who is predicted to finish her book to the third one who is predicted to finish her book. Click on the names and drag them to the appropriate boxes.

First

Second

Third

Barbara

Colleen

Nancy

Grade 7	Reading Three Books
Item Type	Type I – 2 points
Evidence Statement	7.RP.3-1: Use proportional relationships to solve multi-step ratio problems.
Most Relevant Standards for Mathematical Content	<p>7.RP.3: Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i></p> <p>This standard is major content in the grade based on the PARCC Model Content Frameworks.</p>
Most Relevant Standards for Mathematical Practice	This task has some features of Modeling (MP.4) because a mathematical quantity (pages per day) is being defined to capture a real-world notion, “reading rate,” that does not come from the real world with a mathematical definition already associated with it.
Item Description and Assessment Qualities	This two-point task starts with students engaging in the important procedural skills of calculating and comparing unit rates. Students take information presented through the context to order the unit rates from greatest to least. Then, students use those rates to solve an application problem. Using ratios to solve problems is a critical skill for Grade 7 students. It builds on their earlier work with ratios in Grade 6 to set the stage for important Grade 8 work with functions. The use of technology in this task makes it difficult to guess the correct answer or use a choice-elimination strategy. A calculation aid will be available.
Scoring Information	<p>Task is worth 2 points. Task can be scored as 0, 1, or 2.</p> <p>Part A: This part is worth 1 point.</p> <p>Nancy ($\frac{160}{5} = 32$ pages per day)</p> <p>Barbara ($\frac{100}{4} = 25$ pages per day)</p> <p>Colleen ($\frac{54}{3} = 18$ pages per day)</p> <p>Part B: The part is worth 1 point.</p> <p>Barbara ($\frac{320-100}{25} = 8.8$ days)</p> <p>Nancy ($\frac{480-160}{32} = 10.0$ days)</p>

Colleen ($\frac{260-54}{18} = 11.4$ days)