

Linear Functions & Proportionality

1. The information in the table shows the number of pages a student can read in a certain book as a function of time in minutes spent reading. Assume a constant rate of reading

Time in minutes (x)	2	6	11	20
Total number of pages read in a certain book (y)	7	21	38.5	70

a) Write the equation that describes the total number of pages read, y , as a linear function of the number of minutes, x , spent reading.

b) How many pages can be read in 45 minutes?

c) A certain book has 396 pages. The student has already read $\frac{3}{8}$ of the pages and now picks up the book again at time $x = 0$ minutes. Write the equation that describes the total number of pages of the book read as a function of the number of minutes of further reading.

d) Approximately how much time, in minutes, will it take to finish reading the book?

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Total number of pages read in a certain book (y)	7	21	38.5	70

a) Write the equation that describes the total number of pages read, y , as a linear function of the number of minutes, x , spent reading.

$$y = \frac{7}{2}x$$

$$y = 3.5x$$

b) How many pages can be read in 45 minutes?

$$y = 3.5(45)$$

$$y = 157.5$$

In 45 minutes, the student can read 157.5 pages.

c) A certain book has 396 pages. The student has already read $\frac{3}{8}$ of the pages and now picks up the book again at time $x = 0$ minutes. Write the equation that describes the total number of pages of the book read as a function of the number of minutes of further reading.

$$\frac{3}{8}(396) = 148.5$$

$$y = 3.5x + 148.5$$

d) Approximately how much time, in minutes, will it take to finish reading the book?

$$396 = 3.5x + 148.5$$

$$247.5 = 3.5x$$

$$\frac{247.5}{3.5} = x$$

$$70.71428571 \dots = x$$

$$71 \approx x$$

It will take about 71 minutes to finish reading the book.

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