Linear Functions & Proportionality

1. A linear function has the table of values below. It gives the number of miles a plane travels over a given number of hours while flying at a constant speed.

Number of hours traveled (x)	2.5	4	4.2
Distance in miles (y)	1,062.5	1,700	1,785

a) Describe in words the function given in this problem.

b) Write the equation that gives the distance traveled, y, in miles, as a linear function of the number of hours, x, spent flying.

c) Assume that the airplane is making a trip from New York to Los Angeles, which is a journey of approximately 2,475 miles. How long will it take the airplane to get to Los Angeles?

d) If the airplane flies for 8 hours, how many miles will it cover?

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a) Describe in words the function given in this problem.

The total distance traveled is a function of the number of hours spent flying.

b) Write the equation that gives the distance traveled, y, in miles, as a linear function of the number of hours, x, spent flying.

$$y = \frac{1\,062.5}{2.5}x$$
$$y = 425x$$

c) Assume that the airplane is making a trip from New York to Los Angeles, which is a journey of approximately 2,475 miles. How long will it take the airplane to get to Los Angeles?

$$2\,475 = 425x$$
$$\frac{2\,475}{425} = x$$
$$5.82352\ldots = x$$
$$5.8 \approx x$$

It will take about 5.8 hours for the airplane to fly 2,475 miles.

d) If the airplane flies for 8 hours, how many miles will it cover?

$$y = 425(8)$$
$$y = 3\,400$$

The airplane would travel 3,400 miles in 8 hours.

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