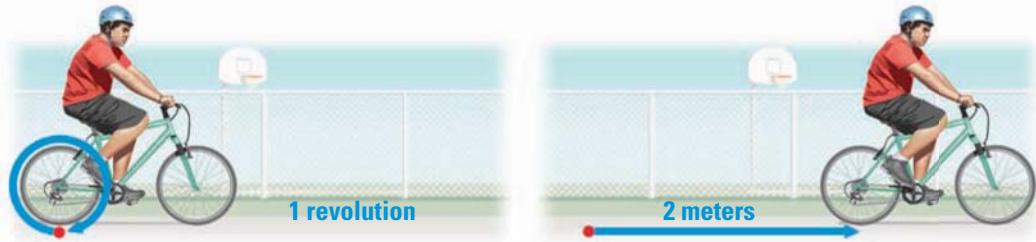


PROBLEM SOLVING

EXAMPLE 4
on p. 255
for Exs. 40–42

40. **BICYCLES** The distance d (in meters) you travel on a bicycle varies directly with the number r of revolutions that the rear tire completes. You travel about 2 meters on a mountain bike for every revolution of the tire.



- Write a direct variation equation that relates r and d .
- How many meters do you travel in 1500 tire revolutions?

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41. **VACATION TIME** At one company, the amount of vacation v (in hours) an employee earns varies directly with the amount of time t (in weeks) he or she works. An employee who works 2 weeks earns 3 hours of vacation.
- Write a direct variation equation that relates t and v .
 - How many hours of vacation time does an employee earn in 8 weeks?

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42. **LANDSCAPING** Landscapers plan to spread a layer of stone on a path. The number s of bags of stone needed depends on the depth d (in inches) of the layer. They need 10 bags to spread a layer of stone that is 2 inches deep. Write a direct variation equation that relates d and s . Then find the number of bags needed to spread a layer that is 3 inches deep.

EXAMPLE 5
on p. 256
for Exs. 43–44

43. **TAKS REASONING** At a recycling center, computers and computer accessories can be recycled for a fee f based on weight w , as shown in the table.

Weight, w (pounds)	Fee, f (dollars)
10	2.50
15	3.75
30	7.50

- Explain why f varies directly with w .
- Write a direct variation equation that relates w and f . Find the total recycling fee for a computer that weighs 18 pounds and a printer that weighs 10 pounds.

44. **TAKS REASONING** You can buy gold chain by the inch. The table shows the price of gold chain for various lengths.

Length, l (inches)	7	9	16	18
Price, p (dollars)	8.75	11.25	20.00	22.50

- Explain why p varies directly with l .
- Write a direct variation equation that relates l and p . If you have \$30, what is the longest chain that you can buy?