54.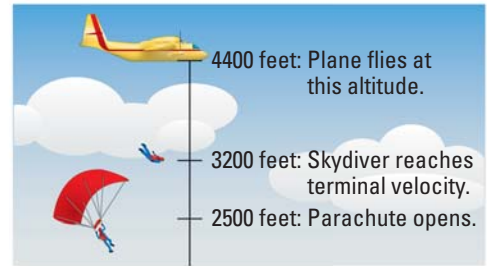 ◆ **MULTIPLE REPRESENTATIONS** A skydiver in free fall will eventually reach a constant velocity, called terminal velocity. A skydiver reaches a terminal velocity of −160 feet per second at an altitude of 3200 feet.

4400 feet: Plane flies at this altitude.

3200 feet: Skydiver reaches terminal velocity.

2500 feet: Parachute opens.

  a. Writing an Equation Write an equation for the altitude a (in feet) of the skydiver as a function of the time t (in seconds) after reaching terminal velocity.

  b. Making a Table Make a table of values for $t = 1, 2, 3, 4$, and 5 seconds. The skydiver wants to open the parachute after reaching an altitude of about 2500 feet. After how many seconds should the skydiver open the parachute?

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55. 🔻 **TAKS REASONING** The table shows the fuel capacities of two ferries in Puget Sound, Washington, and the average rates of change in tank fuel when the ferries are burning fuel.

Ferry	Fuel capacity (gal)	Rate of change (gal/h)
Rhododendron	11,250	−30
Spokane	135,000	−240

  a. Model For each ferry, write an equation that gives the amount of tank fuel f (in gallons) as a function of the time t (in hours) that fuel is burned.

  b. Calculate Both ferries start with a full tank. How many gallons of fuel will each ferry have left after 3 hours?

  c. Explain If both ferries continue to burn fuel without refueling, which ferry will run out of fuel first? How many gallons will the other ferry have at that time? Your answer should include the following:

   • the number of hours that each ferry will take to burn all of its fuel

   • an explanation of how you used the equations in part (a)

56. **CHALLENGE** Due to soil erosion, the surface area of Dongting Lake in China is decreasing. Its surface area was about 2626.5 square kilometers in 1995. From 1950 to 1995, the average rate of change in surface area was about −38.3 square kilometers per year. From 1825 to 1950, the average rate of change was about −13.2 square kilometers per year. Approximate the surface area in 1825.

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MIXED REVIEW FOR TAKS

57. 🔻 **TAKS PRACTICE** A store sells paperback books for $7 each and hardcover books for $20 each. The store sells 5 books to a customer. Which of the following could be the total cost of the books? *TAKS Obj. 2*

  (A) $40   (B) $44   (C) $74   (D) $80

58. 🔻 **TAKS PRACTICE** The test scores for a class were 57, 62, 77, 80, 81, 81, and 90. Which measure of data is greatest for the class? *TAKS Obj. 9*

  (F) Mean   (G) Median   (H) Mode   (J) Range