

## Googies, Pancakes, Band-Aids, and Shel Silverstein

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### "Overdues"

- (5) If the fine were \$2,044, how many days would the book be overdue? How many years?
- (6) Create a graph for the amount of money owed for an overdue book if the library charges 10¢ a day.
- (7) Write the function for the graph in (6).

### Mathematical Concepts Used

- Computation
- Ratios; ratio and proportion
- Percent
- Measurement
- Conversion of units
- Area and volume
- Functions and graphs
- Equations (with or without algebraic symbols)
- Algebraic thinking

### "Overdues"

- (1) 42 years = 15,330 days overdue
- (2) \$1533 fine owed
- (3) 51 books
- (5) 20,440 days or 56 years overdue
- (6) The graph should be a set of isolated points on a line.
- (7)  $f(n) = 0.10n$  for  $n$  = number of days

### "Overdues" from *A Light in the Attic*

The fine for an overdue library book is 10¢ a day. (Use 365 days for a year; ignore leap years.)

- (1) How many days is the book overdue?
- (2) How much is owed for the overdue book?
- (3) If new books cost \$29.95, how many new books can the library buy with the fine?
- (4) What would you buy for yourself if you could use the fine for the book?

### "One Inch Tall" from *Where the Sidewalk Ends*

- (1) Identify any unrealistic measurements in the poem. Explain why.
- (2) Do the times make sense? Explain why.
- (3) If you were one inch tall, what would be the length of your right foot, the length of your left arm, and the circumference of your neck?
- (4) If you were one inch tall, what would the height of your desk seat above the floor need to be?

### "One Inch Tall"

$$\frac{1 \text{ inch}}{\text{height in inches}} = \frac{x}{\text{foot length in inches}}$$

### "Googies"

- (1) e.g., 20 lean ones; or 4 husky ones and 16 mean ones
- (2)  $4 \cdot 80 + 15x = 500$ , so  $x = 12$
- (3)  $20L + 30C = 240$  or  $2L + 3C = 24$   

C	0	2	4	6	8
L	12	9	6	3	0
- (4) ratio is 15:40 or 3:8; 8 dirty ones; 18 happy ones
- (5) 60% of a fat one; 400% of a mean one
- (6)  $20L = 25W$  or  $4L = 5W$ ; for example,  

L	5	10	15	20	25
W	4	8	12	16	20

### "The Googies Are Coming" from *Where the Sidewalk Ends*

- (1) The googies have \$4 to spend. What could they buy?
- (2) The googies spent \$5 for 4 husky ones and some dirty ones. How many dirty ones did they buy?
- (3) The googies want to buy lean ones and clean ones. How many of each can they buy if they spend \$2.40?

### "Pancake?" from *Where the Sidewalk Ends*

- (1) Terrible Theresa wants "the one in the middle." If it is the 87<sup>th</sup> pancake, how many pancakes are in the stack?
- (2) Each pancake is 0.125 inches thick. How tall is the stack?
- (3) The diameter of each pancake is 4.5 inches. Assume each pancake is a cylinder. Find the volume of one pancake and the volume of the stack.

### "The Googies Are Coming"

- (4) Find the ratio of the cost of a dirty one to the cost of a happy one. 3 happy ones are worth how many dirty ones? 48 dirty ones are worth how many happy ones?
- (5) A clean one is worth what percent of a fat one? A lean one is worth what percent of a mean one?
- (6) Can the Googies trade lean ones for weak ones? How many of each?

### "Pancake?"

- (4) Each pancake weighs 1.25 oz. Find the weight of the stack in pounds.
- (5) If the diameter of each pancake is 3 inches and its thickness is 0.125 inches, find the volume of one pancake.
- (6) How many of these 3-inch pancakes can be made using 500 cubic inches of batter? How tall would the stack be?

### "Pancake?"

- (1) 173 pancakes
  - (2) 21.625 inches
  - (3) about 1.988 cubic inches; about 343.931 cubic inches
  - (4) 216.25 oz. or about 13.52 lb.
  - (5) about 0.884 cubic inches
  - (6) about 566 pancakes; about 70.75 inches
- Use  $V = \pi r^2 h$  in (3) and (5).

### "Band-Aids"

- (1) 113.75 square inches; about 0.79 square feet
- (2) about 9.48 feet
- (4) about 8,294,400 square inches; about 2,552,123 band-aids
- (5) about 85,070 boxes; \$160,784.19

### "Band-Aids" from *Where the Sidewalk Ends*

Each Band-Aid is a rectangle  $3\frac{1}{4}$ " by 1".

- (1) How much surface area in square inches of the person's body is covered with Band-Aids? In square feet?
- (2) If all the left-over Band-Aids are lined up end-to-end, how many feet long would the line be?
- (3) How many Band-Aids would you need to cover the palm of your hand? Your chin? Your forehead? The bottom of your foot?

### "Big Eating Contest" from *Falling Up*

- (1) How much money did the contestant lose?
- (2) What could be the value of first prize so that the contestant makes a profit?
- (3) If the contestant's profit is 50% of the expenses, what would be the value of first prize?
- (4) Find the ratio of the cost of the contestant's food to the cost of the hospital bill.

### "Band-Aids"

- (4) How many Band-Aids are needed to completely cover a football field, including the end-zones? Dimensions of a football field are 120 yards by  $53\frac{1}{3}$  yards.
- (5) If there are 30 Band-Aids in a box and a box costs \$1.89, how many boxes of Band-Aids are needed to cover the football field? How much would it cost to cover the field?

### "Big Eating Contest"

- (5) If the ratio of the food cost to the hospital bill is 4 to 15 and the food cost is still \$20, what is the hospital bill?
- (6) If first prize is \$200 but the hospital bill is only \$50, what percent of the profit are the expenses?
- (7) If hamburgers cost \$3 and fries cost \$2, how many of each did the contestant buy and eat? What combination do you think the contestant ate? Why?

### "Big Eating Contest"

- (8) Another contestant spent \$25 for hamburgers and fries but could not eat all of the food and dropped out of the eating contest. What combinations could this contestant have bought if hamburgers cost \$3 and fries cost \$2?

### "Big Eating Contest"

- (1) \$127 lost  
(2) prize > \$132  
(3) profit = \$66 and prize = \$198  
(4) ratio is 20:110 or 2:11  
(5) hospital bill = \$75  
(6) profit = \$128 and percent = 56.25%  
(7)  $3H + 2F = 20$

$$\begin{array}{r} H \quad 0 \quad 2 \quad 4 \quad 6 \\ F \quad 10 \quad 7 \quad 4 \quad 1 \end{array}$$

- (8)  $3H + 2F = 25$

$$\begin{array}{r} H \quad 1 \quad 3 \quad 5 \quad 7 \\ F \quad 11 \quad 8 \quad 5 \quad 2 \end{array}$$

### References

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