

Level M - Form 1 - Applied Mathematics: Problem Solving and Reasoning

Sample Question

Ed sold 75% of the toy soldiers he had in his collection. What information is needed to determine how many soldiers he sold?

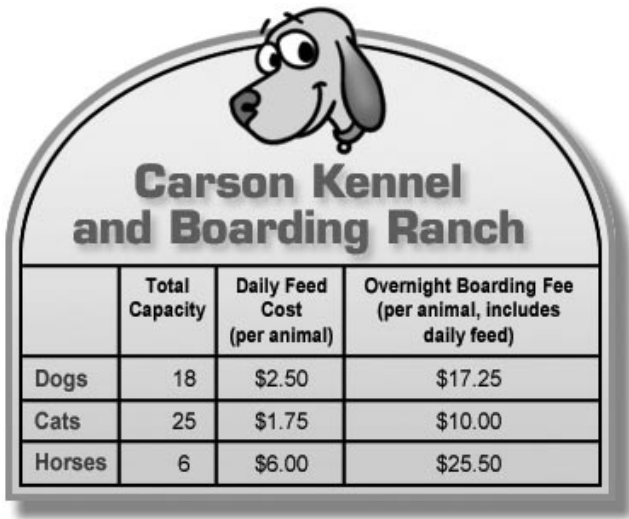
- A the price he charged for each toy soldier
- B the size and weight of each toy soldier
- C the total number of toy soldiers he had in his collection
- D the length of time he had been trying to sell his collection

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1. Kerrie has 14 more than twice the number of marbles that Tim has. If Tim has 8 marbles, which expression shows the number of marbles Kerrie has?

- A $8 + 14$
- B $8 + 14 \times 2$
- C $14 + 2 \times 8$
- D $2 \times 8 - 14$

This sign shows information about the charges at Carson Kennel and Boarding Ranch. Study the sign. Then do Numbers 2 through 7.



	Total Capacity	Daily Feed Cost (per animal)	Overnight Boarding Fee (per animal, includes daily feed)
Dogs	18	\$2.50	\$17.25
Cats	25	\$1.75	\$10.00
Horses	6	\$6.00	\$25.50

- Write an expression to show the total feed cost for 9 dogs for 5 days.
 - $2.50 \times (5 + 9)$
 - $(9 \times 2.50) \times 5$
 - $9 \times (5 \times 17.25)$
 - $5 \times (17.25 - 2.50)$
- After paying for feed, how much does the ranch earn daily for each horse it boards overnight?
 - \$21.50
 - \$14.75
 - \$19.50
 - \$31.50
- After accounting for the cost of food, which animal is the most profitable to board overnight?
 - horse
 - dog
 - cat
 - They are equally profitable.
- What is the total number of animals the ranch can board daily?
 - 18
 - 25
 - 49
 - 39
- What information is **not** necessary to find the total feed cost for a week if the ranch is at full capacity?
 - the number of dogs the kennel can board
 - the overnight boarding fee for cats
 - the daily cost of feed for the horses
 - the number of days the ranch is open per week
- Lin is going on vacation for 5 days and takes her dogs and cats to the kennel. What missing information is needed to calculate Lin's total fee?
 - the weight of each animal
 - the number of each type of animal
 - the number of hours each animal sleeps
 - the age of each animal

8. Denise rode her bike for 45 minutes. She wants to calculate her average speed. What information does she still need?

- F the wheel size
- G the distance traveled
- H the number of hills climbed
- J the gears used

9. An electrician charged \$325 to install a ceiling fan. Parts cost \$205 and the job took 3 hours. Which expression shows the electrician's profit per hour?

- A $(\$325 - \$205) \div 3$
- B $(\$325 - \$205) \times 3$
- C $\$325 \div 3$
- D $(\$325 + \$205) \div 3$

Study this information from a video rental store. Then do Numbers 10 through 14.

Video and Game Zone Rates*

\$4.00 for 1-day new release movie rental
\$1.99 for 2-day regular movie rental

\$2.99 for 2-day game rental
Game Special: Rent 2, get 1 free!

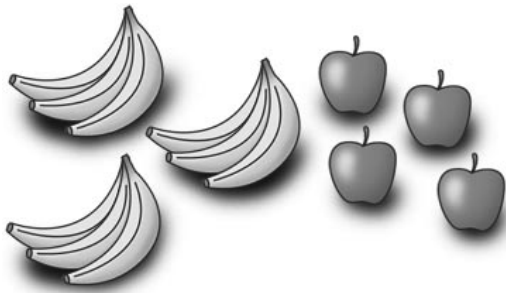
**Late charge: \$2.00 per day for
games and movies**

***tax included**



10. Jared rents 3 games and 1 regular movie. What is the total cost?
- F \$7.97
 - G \$9.98
 - H \$6.97
 - J \$8.97
11. Chad returns his regular movie rental 3 days late. Write an expression to show his total cost including the rental fee.
- A $3 \times (\$1.99 + \$2.00)$
 - B $(3 \times \$2.00) - \1.99
 - C $\$1.99 + (3 \times \$2.00)$
 - D $(3 \times \$1.99) + \2.00
12. The video store manager buys a new release movie for \$85. Assuming it is never returned late, on which rental would the store first make a profit?
- F 28th
 - G 29th
 - H 21st
 - J 22nd
13. Kimberly wants to rent 3 games. Which information is **not** necessary for her to determine if she has enough money?
- A the amount of money she has
 - B the cost for renting each game
 - C the game special of rent 2, get 1 free
 - D the difference between new release and regular movies
14. Write an expression to find the cost of renting 2 new release movies and 1 game.
- F $(2 \times \$4.00) + \2.99
 - G $2 \times (\$4.00 + \$2.99)$
 - H $(2 \times \$1.99) + \2.99
 - J $(2 \times \$2.99) + \4.00

15. Which of these is a way to express the total number of fruit shown?



- A $3 + 3 + 4$
- B $(3 \times 3) + 4$
- C $3 \times (3 + 4)$
- D $(3 \times 4) + 3$

16. A hardware store is selling pine for \$.98 per foot and cedar for \$2 per foot. A homeowner has \$750 for purchasing wood to build a pine deck. Does the homeowner have enough money? What additional information is needed to answer the question?

- F the number of days per week the deck will be used
- G the type of wood the homeowner will use
- H the amount of wood needed
- J the number of hours it will take to build the deck

Study the advertisement for an art supply store. Then do Numbers 17 through 20.

HUGE SALE!

Creative Arts Inc.

Brushes	\$4.25 each
Paints	\$5.00 per tube
Pencils	\$13.50 (box of 12)
Canvas (36" x 24")	\$11.50 each
Sketch Pad (30 pages)	\$14.80 each

17. A customer has a coupon for an additional one-half off any one item. She buys a sketchpad and a box of pencils. Which of these is her cost before tax using the coupon?
- A \$19.40
 - B \$28.30
 - C \$14.15
 - D \$20.90
18. Sylvia goes to the store for painting supplies. She buys 4 tubes of paint and 3 brushes. Which represents the total amount Sylvia spends?
- F $(4 \times 3) + (\$4.25 + \$5.00)$
 - G $(4 \times \$4.25) + (3 \times \$5.00)$
 - H $(3 \times \$4.25) + (4 \times \$5.00)$
 - J $(4 + 3) \times (\$4.25 + \$5.00)$
19. The store manager finds a pencil set with the case broken. He decides to sell the pencils individually. Given the price of a pencil set, which is the most reasonable price for a single pencil?
- A \$1.13
 - B \$1.35
 - C \$1.50
 - D \$1.00
20. At the end of the day, the store manager balances the register and the inventory by comparing the receipt record with the amount of money in the drawer. Which of these does the manager **not** need to know?
- F the number of canvases sold
 - G the price for each pencil set
 - H the number of pages in a sketchpad
 - J the price for each canvas