

## Dog Mushing Math Problems — Set 2: Dog Food

By Carol Lee Gho

A dog kennel has 10 dogs. The dogs are conditioned for racing 5 months out of the year. During racing season the dogs eat 1 pound of food per day. A 40-pound bag of high protein dog food costs \$42 per bag. A dried chum salmon weighs around 2 pounds. Freight costs are \$0.88 per pound. Fish oil costs \$15 per gallon and you will use a gallon per month when using bagged dog food.

1. 30 days = 1 month
  - a. How many bags of dog food will it take to feed the dogs for one month? Round up to the nearest bag.
  - b. How much will the bags of dog food cost for a month?
  - c. How much will the freight be for one month?
  - d. With the freight and the dog food how much is that per month and 1 gal of fish oil?
  - e. How much would it be for 5 months?
  
2. In a good chum run you can catch 200 fish a day. There is a summer chum run that lasts 2 weeks and in the fall there is a chum run that also lasts 2 weeks.
  - a. If you fished during the two runs how many fish could you catch?
  - b. How many pounds of dog food would that be?
  - c. How many fish would you need to catch to feed your dogs for 5 months?
  - d. From c. above how many days of fishing would you need to fish?
  - e. If you only fished on weekends during the runs would you be able to get enough fish?
  - f. Would you need to give your dogs fish oil as a supplement when you feed them dry chum?
  
3. During the other 7 months of the year each dog only needs about half the amount of food.
  - a. How many bags of dog food would you need for the other 7 months?
  - b. How much would it cost?
  - c. How many dried salmon would you need?
  - d. How many days would you need to fish during the run?
  - e. How much would it cost to feed your dogs bagged dog feed for 12 months?
  - f. How many fish would you need to catch and dry to feed your dogs for 12 months?

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### Teacher's Guide & Answers

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Alaska State Content Standards: Math

Compute fluently with multi-digit numbers and find common factors and multiples.

6.NS.2, 6.NS.3, 7.NS.2, 7.NS.3

Apply and extend previous understandings of arithmetic to algebraic expressions.

6.EE.1, 6.EE.3, 6.EE.4, 7.EE.1, 7.EE.3, 8.EE.1

1.
  - a.  $7\frac{1}{2}$  bags rounds to 8 bags (10 lbs per day, 1 bag every 4 days;  $30/4=7\frac{1}{2}$ )
  - b. \$336 ( $42 \times 8 = \$336$ )
  - c. \$281.60 ( $8 \times 40 \times .88 = \$281.60$ )
  - d. \$632.60 ( $\$336 + \$281.60 + \$15 = \$632.60$ )
  - e. \$3,163 ( $5 \times 632.50 = \$3,163$ )
  
2.
  - a. 5600 fish ( $200 \times 28 = 5600$ )
  - b. 11,200 pounds ( $5600 \times 2 = 11,200$ )
  - c. 750 ( $150 \times 5 = 750$ )
  - d. around 4 days ( $750/200 = 3.5$  rounded to 4 days)
  - e. yes
  - f. no
  
3.
  - a. 28 bags (5 lbs per day, 1 bag last 8 days,  $30/8 =$  about 4 bags so  $4 \times 7 = 28$ )
  - b. \$2,266.60 ( $28 \times 42 + 28 \times 40 \times .88 + 7 \times 15 = \$2,266.60$ )
  - c. 525 (2.5 per day  $\times 30$  days  $\times 7$  months = 525 fish)
  - d. 3 days
  - e. \$5,229.60 ( $\$3,163 + \$2,266.60 = \$5,229.60$ )
  - f. 1,275 fish ( $750 + 525 = 1,275$ )