



Open-Ended Math Problems

In the following questions, the numbers could be replaced with blanks or a variety of choices, allowing the students to fill in numbers with which they are comfortable, thus differentiating the task. It would be appropriate to pair students up for these questions in order to encourage mathematical conversations.

1. Mark wants to buy some doughnuts. He is very frugal and likes to save even the smallest amount of money. He found a coupon in the paper for Tim Horton's donuts. The coupon was for \$1 off a dozen doughnuts. This week a dozen doughnuts are on sale for \$3.99 without the coupon and \$.35 a piece if you use the coupon. What do you think Mark will do and why?
2. Mary and her mom went shopping on Saturday. They bought at least one item from each of the 3 departments that they visited. Mary and her mom gave the clerk \$120 and they got back more than \$10.00 in change. What items did they buy? Show all your work.

HOUSEWARES

Dishtowels: \$11.38
Curtain Rods: \$12.98
Bath Mats: \$29.58

CLOTHING

Shirt: \$30.98
Dress: \$49.90
Slacks: \$39.90

TOOLS

Hammer: \$17.90
Saw: \$23.90
Drill: \$25.78

3. An ice cream stand has 5 different flavours. A group of children come to the stand and each buys a double scoop cone with 2 flavours. Each of the children chooses a different combination of flavours and every combination is chosen. How many children are there? Show how you got your answer.
4. Represent the number 1000 in as many different ways as you can.
5. Start at 25 and count to 100. What ways could you skip count in order to land right on 100?
6. Using flyers, determine how much money you will spend to purchase enough treats for 75 trick-or-treaters (you decide what they get).
7. Find as many ways as you can to buy exactly 1000 paperclips. Paperclips are sold in sets of 500, 250, or 100.
8. Jan has 375 stickers. Each page in her sticker book holds 25 stickers. How many pages does Jan need for all her stickers?
9. Mr. Bulge has to give his class a sit-up test. There are 33 students in his class and he needs to display the data in such a way that he can easily examine the results. Show 3 different ways that he could do this and choose the one you think is the easiest way to examine the results. Explain your choice.
10. The Graduation Committee is setting up card tables for the graduation. One table seats 4, 2 tables together would seat 6, 3 tables 8. No table seats more than 12. Show 3 different ways that 16 couples could be seated for the Graduation.
11. There are 30 legs in my backyard. There are only kids and dogs in the backyard. How many kids and dogs could be in the backyard? Show as many possibilities as you can.
12. List 10 possible combinations you could get with 4 darts. The numbers on the targets are 7-5-3-1.
13. After "Hundreds Day", students estimated and then counted how far one hundred footprints would take them from their classroom by laying down one hundred footprints. Once they had seen that distance and recorded it on a map of the school, they were given the problem of estimating how far the footprints of the grade eight students would go. They were asked to explain their thinking in pictures, numbers and words.
14. There is a group of 2-D shapes in a bag. Altogether there are 14 sides. What shapes could be in the bag? Explain your answer using pictures, numbers and words. Make a different group of shapes that also has 14 sides.