Math 4B - HW 11 (Winter Break)

school nova™

1) Solve the following equations:
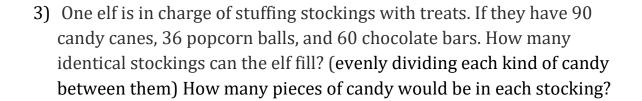
    a. $2x+4=28$

    b. $4(x-2)+20=8$

    c) $\dfrac{x-3}{2x}=\dfrac{5}{9}$

    c. $2x+4+3x-7=\dfrac{x}{2}$

2) Santa's elves build three types of toys: teddy bears, dolls, and racecars. One day, the elves are able to build 700 toys. They were able to built 100 more teddy bears than dolls, and three times as many racecars as teddy bears. How many of each toy did they make?

3) One elf is in charge of stuffing stockings with treats. If they have 90 candy canes, 36 popcorn balls, and 60 chocolate bars. How many identical stockings can the elf fill? (evenly dividing each kind of candy between them) How many pieces of candy would be in each stocking?

4) Insert brackets in the following number sentences to make the equality true.

    a. $3 \times 128 + 72 = 600$

    b. $138 \div 2 \times 3 = 23$

    c. $60 + 22 \times 5 = 400 - 20 + 30$

5) Consider the following sets:

C = { "Christmas", "winter", 12, 25, "Santa", "presents", "candles" }

H = { "Hannukah", 8 , "menorah", "candles", "winter", 12, "presents" }

a) Write down C ∪ H and C ∩ H. Draw a Venn Diagram for these two sets, with labels for C, H, C ∪ H and C ∩ H.

b) Answer True/False to the following questions

    i)   8 ∈ C   ii) 8 ∈ H

    iii)   "menorah" ∈ C ∩ H   iv) "winter" ∈ C ∪ H

    v)   "reindeer" ∉ C   vi) "menorah" ∉ H

6) Compute the following expressions:

a) $45 - 68 =$

b) $70 - (-12) =$

c) $\dfrac{9}{16} - \dfrac{2}{8} =$

d) $\dfrac{2}{5} - \dfrac{5}{7} =$

e) $\dfrac{12}{27} \times \dfrac{3}{8} =$

f) $\dfrac{21}{53} \div \dfrac{9}{53} =$

7) Fill in the following table:

a	5			
a^2		9		
a^3			8	
a^{-1}				$\dfrac{1}{4}$

8) Tonight is the 3rd night of Hanukkah, so we will need to pick 3 candles. Fortunately, you have 8 candles to pick from. How many ways are there to pick any 3 candles out of the 8 total (without caring about the order)? How many ways are there to arrange 3 candles (in order) out of the 8 available?

9) For Christmas, little Timmy is going to get three kinds of presents: candy, a toy, and a video game console. He has 3 options for what kind of candy he can get: candy canes, popcorn balls, or chocolate bars. And 4 options for his toy: a teddy bear, a model racecar, a Lego set, or art supplies. Finally, he 3 video game options: an Xbox, a PlayStation, or a Nintendo Switch. If little Timmy gets one present from each category, how many different combinations of presents can he get?

10) How do you feel about the questions in this homework?

Which problems were easy? Or hard? Are there any questions/topics that you would like to go over in class again?

Any other questions / comments / concerns?