

Each WA is now worth **10 points** total. Work right on these pages. You can work together or see a tutor, but NEVER copy. This WA is for a grade, so dishonesty or cutting corners may earn a 0 for all involved.

1. [3 pts] Create and use a well-labeled work backward diagram to solve this problem. (See the sample on the bottom of the "Item 9" handout from Tuesday, Jan. 23.) Show meaningful work, and clearly indicate your final answer.

Secretary Liz has a bowl of peppermint candy on her desk. On the first day of classes, her office was very busy, and $\frac{5}{8}$ of the candy was eaten. She poured in another 60 pieces. On the next day, 18 pieces were eaten. Finally, on the third day, $\frac{1}{3}$ of what was left got eaten, and she counted 40 pieces in the bowl when she left to go home that day. How many pieces were in the bowl to start with?

2. (a) [0.5 pts] In the sequence 15, 16, 18, 21, 25, . . . , what is the value of a_8 ?

(b) [0.5 pts] Is the sequence above arithmetic? Why or why not?

3. [1 pt] Find the first five terms of an arithmetic sequence whose second term is 18 and whose $CD = -8$.

4. [1 pt] Find the first five terms of a geometric sequence whose third term is 20 and whose $CR = -5$.

5. (a) [0.5 pts] 164.6 is a term of the sequence $1.2, 4.1, 5.3, 9.4, \dots$; what a_n notation would you use to represent this term?

(b) [0.5 pts] Is the above sequence one of our special kinds? If yes, tell which kind.

6. [1 pt] Write the first 5 terms of a sequence whose difference sequence is $+3, \times 4, +5, \times 6$, and whose third term is 30.

7. [2 pts - 1 each] Solve each problem by any meaningful method, showing clear work. Clearly indicate your final answers.

(a) Darren has a marble collection. 210 marbles make up $\frac{5}{7}$ of his collection. How large is his collection?

(b) Alisha's running for charity this year. If 93.5 miles is $\frac{4}{15}$ of the way to her goal, what is her goal?