Algebra
Decreasing Differences

I am learning to work with decreasing sequences with a constant difference.

Example: 30, 28, 26, 24, …

Exercise 1

In each group below, find the pattern and write down the next three numbers in the sequence. In a sentence explain in words how you go from one number to the next number.

1)   24, 22, 20, 18, …   (6)   29, 25, 21, 17, …

2)   80, 70, 60, 50, …   (7)   59, 53, 47, 41, …

3)   55, 50, 45, 40, …   (8)   47, 40, 33, 26, …

4)   48, 44, 40, 36, …   (9)   89, 79, 69, 59, …

5)   33, 30, 27, 24, …   (10)   98, 87, 76, 65, …

Fill in the missing number.

11)   65, 60, 55, _ , 45, 40   (16)   47, _ , 39, 35, 31

12)   18, 15, 12, _ , 6, 3   (17)   65, _ , 51, 44, 37

13)   48, 40, 32, _ , 24, 16   (18)   81, _ , 55, 42, 29

14)   61, 55, _ , 43, 37   (19)   84, _ , 68, 60, 52

15)   100, _ , 94, 91, 88   (20)   92, _ , 74, 65, 56

Extra for experts

In each group below, find the pattern and write down the next three numbers in the sequence. Describe in words how you go from one number to the next number.

1) $6, 5\frac{1}{2}, 5, 4\frac{1}{2}$, …   (4)   10.5, 10, 9.5, 9, …

2) $7\frac{1}{4}, 7, 6\frac{3}{4}, 6\frac{1}{2}$, …   (5)   6.25, 5.75, 5.25, …

3) $9\frac{1}{2}, 9, 8\frac{1}{2}, 8$, …   (6)   5.1, 4.9, 4.7, …

Investigation

What happens when you try to find the next three numbers in this decreasing sequence?

        14, 11, 8, …