

## Sequences

6.1  
1/2

A sequence is a fct w/ domain  $\{1, 2, 3, \dots\}$

Ex1: Write down terms in the sequence  $f(x) = 3x - 5$

Notation  $\rightarrow$  in general, we would write  $a_n = 3n - 5$   
where the notation implies that the fct is a  
sequence.

Ex2:  $a_n = -2n + 7$        $b_n = n^2 + n$        $c_n = (-1)^n \cdot \frac{n+1}{n}$

Ex3: Define  $a_n$  for...

1, 4, 9, 16, ...

$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \dots$

1, 1, 2, 3, 5, 8, ...

## Arithmetic Sequences

Ex4: 1, 4, 7, 10, ...

10, 8, 6, 4, ...

common difference  $d$ , and 1st term  $a_1$ .

Ex5: Find the 10<sup>th</sup> term in  $a_n$  if  $a_1 = -3$  and  $d = 2$

Ex5.5: Find the 40<sup>th</sup> term if the 7<sup>th</sup> is -13 and the 42<sup>nd</sup> is -761.

Derive  $a_n = a_1 + (n-1)d$ .

Ex6: If  $\{a_n\}$  begins 4, 1, -2, -5

a) find  $a_{37}$

b) find  $a_n$ .

16.1  
2/2

Carl Gauss and the arithmetic series

Gauss was 7 y.o.  
in Brunswick (Germany)  
born 1777  
teacher Büttner

Derive  $S_N = \frac{(a_1 + a_N) N}{2}$

Ex 7: Find  $17 + 28 + 39 + \dots + 1502 + 1513$

↑  
137<sup>th</sup> term

★ \$15 / 3br - 1500ft<sup>2</sup> - 3 BR House (Greenfield/7-mile)



This property is rented out. It has hard wood floors, newer windows, newer roof finished basement, 1.5 bath, large backyard, 3-bedrooms. Valued at 40k on Zillo. I'm only asking 15k