

## Sums of Arithmetic and Geometric Series

Arithmetic

$$S_n = \frac{n(t_1 + t_n)}{2}$$

you will need

$n, t_1, t_n$

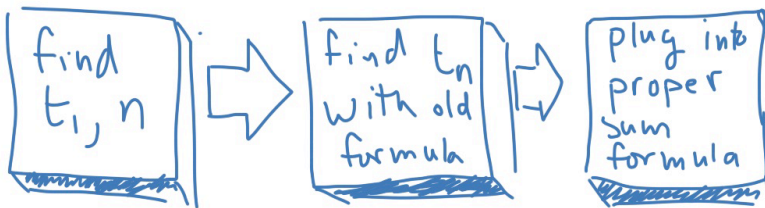
Geometric

$$S_n = \frac{t_1(1-r^n)}{1-r}$$

you will need

$n, t_1, r$

**Ex 1** Find the sum of the first twenty terms of the arithmetic series  
 $8 + 5 + 2 + \dots$



yay!

**Ex 2** Find the sum of the following arithmetic series:

$$\sum_{n=1}^{16} (7-2n)$$

**Ex 3** Find the sum of the following geometric series

$$\sum_{k=1}^5 \left(-\frac{2}{3}\right)^k$$