Adjusted for inflation, the average annual return of the S&P 500 for the last 86 years is 7.7%.

If you could invest $100 into the S&P 500 right now, should you do it?

YES! You'd have almost $55k!

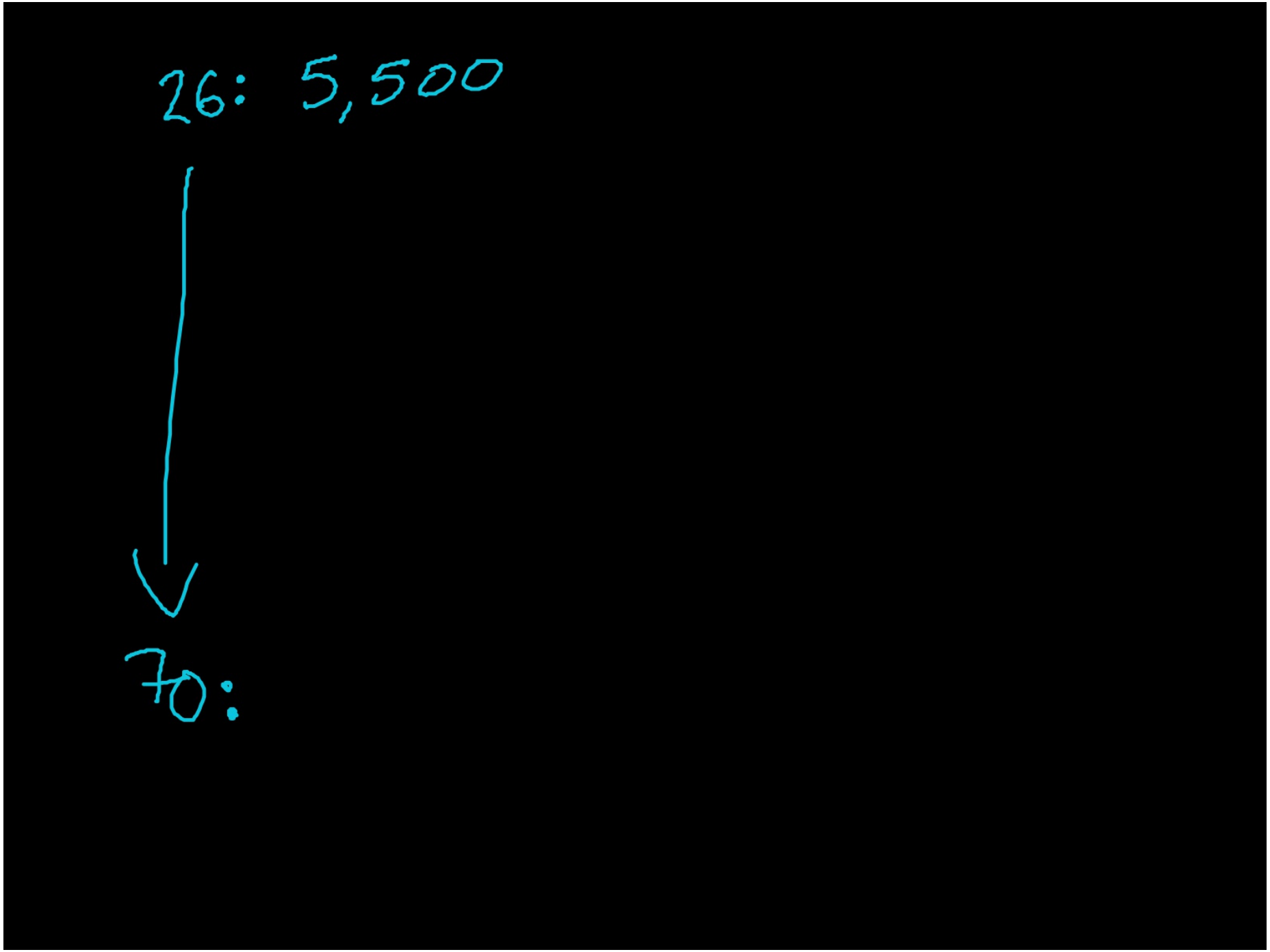
$Un = u_1 r^{(n-1)}$

Today's learning objective:

By the end of class, I will be able to calculate geometric sequences and series.

Today's language objective:

Sequence vs series (sum)
r =
Geometric vs arithmetic


26: 5,500
70:

The n^{th} term of a geometric sequence	$u_n = u_1 r^{n-1}$
The sum of n terms of a finite geometric sequence	$S_n = \frac{u_1(r^n - 1)}{r - 1} = \frac{u_1(1 - r^n)}{1 - r}, \ r \neq 1$
The sum of an infinite geometric sequence	$S_\infty = \frac{u_1}{1 - r}, \ \lvert r \rvert < 1$

44.) $1000 is invested at the beginning of each year for 10 years.

The rate of interest is fixed at 7.5% per annum. Interest is compounded annually.

Calculate, giving your answers to the nearest dollar $1000(1.075)^9 =$

(a) how much the first $1000 is worth at the end of the ten years; $\$1,917$

(b) the total value of the investments at the end of the ten years. $\$14,147$

The n^{th} term of a geometric sequence	$u_n = u_1 r^{n-1}$
The sum of n terms of a finite geometric sequence	$S_n = \frac{u_1(r^n - 1)}{r - 1} = \frac{u_1(1 - r^n)}{1 - r}, \quad r \neq 1$
The sum of an infinite geometric sequence	$S_\infty = \frac{u_1}{1 - r}, \quad \lvert r \rvert < 1$