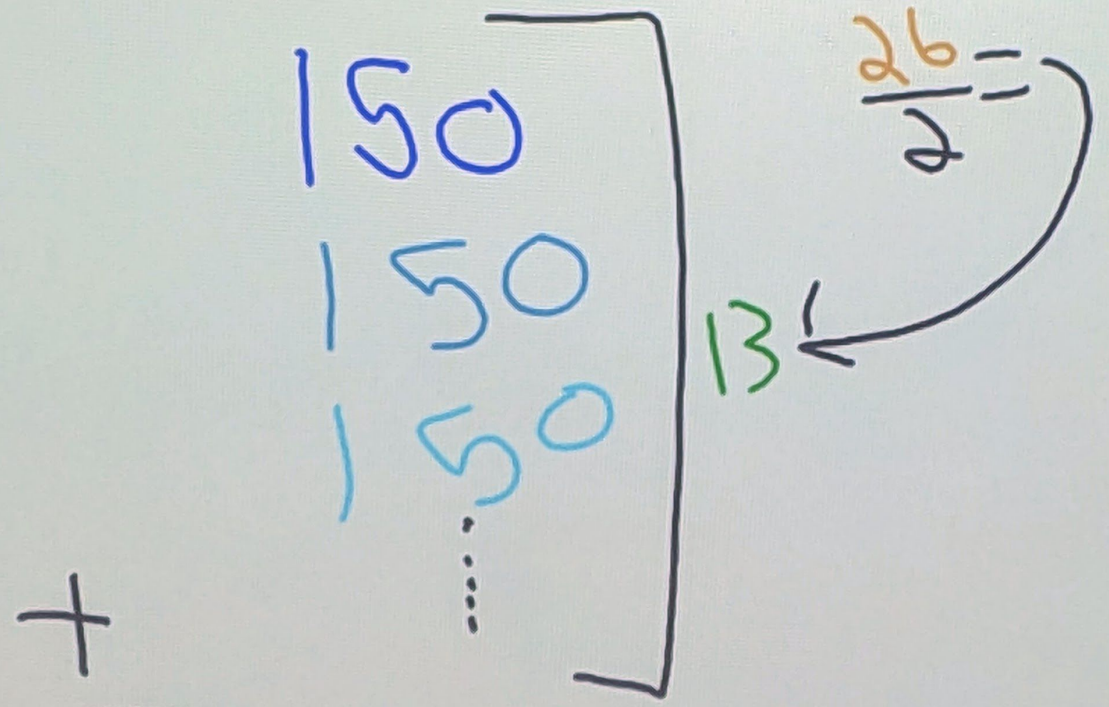


Find the sum of the series

$$50 + 52 + 54 + \dots + \dots + \dots + 96 + 98 + 100 = 1950$$

$a_1$   $a_{26}$

$$a_n = 2n + 48$$



$$150 \cdot 13 = 1950$$

$$\sum_{n=1}^{26} 2n + 48$$

$$100 = 2n + 48$$

$$52 = 2n$$

$$26 = n$$

Find the sum of the series

$60 + 65 + 70 + 75 + \dots + 495 = 24420$

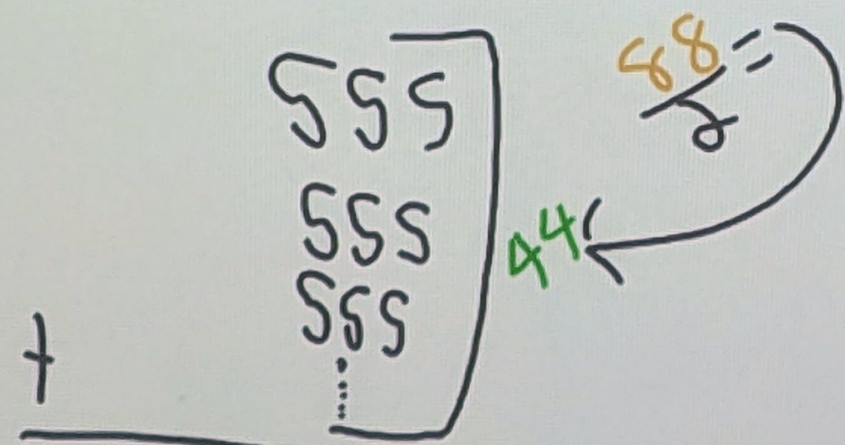
$a_1 = 60$        $a_{88} = 495$

$a_n = 5n + 55$

$495 = 5n + 55$   
 $440 = 5n$

$a_1 + a_{88} =$   
 $60 + 495 = 555$

$88 = n$



$555 \cdot 44 = 24420$

# Find the sum

$$\sum_{n=1}^{50} -6n+10 = \boxed{-7150}$$

$$a_1 = -6(1)+10 = 4$$

$$a_{50} = -6(50)+10 = -290$$

$$n = 50$$

$$S_n = (a_1 + a_n) \cdot \frac{n}{2}$$

$$S_{50} = (4 + -290) \cdot \frac{50}{2}$$

$$S_{50} = \boxed{-7150}$$

# Find the sum

$$\sum_{n=1}^{20} 8(2)^n = \boxed{16777200}$$

$$\begin{array}{ccc} a_1 & a_2 & a_3 \\ 16 & 32 & 64 \\ \cdot 2 & \cdot 2 & \end{array}$$

$$r=2$$

$$S_n = a_1(1-r^n)/(1-r)$$

$$S_{20} = 16(1-2^{20})/(1-2)$$

$$S_{20} = \boxed{16777200}$$

Find the sum

$6144 + 9216 + 13824 + \dots + 531441 = 1582035$

*Handwritten notes:  $a_0$  above 6144;  $r=1.5$  below 6144 and 9216;  $a_{12}$  above 531441; the final result 1582035 is boxed.*

$r = 1.5$

$a_1 = 6144$

$n = 12$

$S_{12} = 6144(1 - 1.5^{12}) / (1 - 1.5)$

$S_{12} = 1582035$

$a_n = 4096(1.5)^n$

$\frac{531441}{4096} = \frac{4096(1.5)^n}{4096}$

$129.7463379 = (1.5)^n$

*Handwritten notes:  $n$  is circled in red; an arrow points from the circled  $n$  to the word "guess" written below.*