

$$2 + 2^2 + 2^3 + \dots + 2^n = \frac{2(2^n - 1)}{2 - 1}$$

\downarrow
 510 = $2(2^n - 1)$ $n = 100$ is 40 \cdot 340
 255 = $2^n - 1$ 2 1120
 8 = n ~~7~~ $\frac{180}{90}$ 2290

$$\frac{11^{109}}{10} \rightarrow 11^{109} = 10^9 + 1$$

$$11^{109} = 120 + 121$$

① $\frac{a_1(1-b^n)}{1-b} = 13$

② $\frac{a_1(1-(-r)^{20})}{1-(-r)} = 17$

③ $\frac{a_1(1-b^{20})}{1-b} = \frac{a_2(1-r)}{1+r} = \frac{13}{17}$

$\frac{1440}{120} = 12$
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 $12 = \frac{120}{10}$
 $1440 = 12 \cdot 120$
 $12 + 12r = 17 - 12r$
 $30r = 17 - 12r$
 $r = \frac{17-12r}{30} = -\frac{2}{5}$

$$1 - x < -\frac{3}{4} < 7 - x$$

$$1 < x - \frac{3}{4} < 7$$

$$\frac{13}{4} < x < 7 \frac{3}{4}$$

$$2 - 7$$

~~$N = \frac{8}{3+1} = 2$~~

$$a_1 + a_2 = 10$$

$$a_1 + a_1 + d = 10$$

$$2a_1 + d = 10$$

$$2a_1 + \frac{9}{2} = 10$$

$$a_1 = \frac{11}{4}$$

$$a_{n+2} - a_n = 3$$

$$a_{42} - a_1 = 3$$

$$a_3 - a_1 = 3$$

$$a_1 + 2d - a_1 = 3$$

$$2d = 3$$

② $d = \frac{3}{2}$

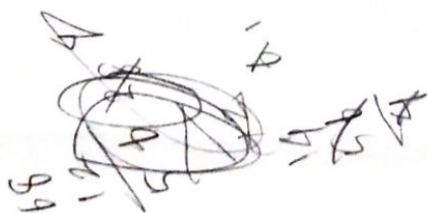
$$S_{40} = \frac{46}{2} \left(2 \left(\frac{17}{4} \right) + (40-1) \frac{3}{2} \right)$$

$$= 26(8.5 + 38.5)$$

$$= 26(47)$$

$$= 1242$$

① 17
 8
 5
 4



10
 8
 7
 6
 5
 4
 3
 2
 1
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

$$\frac{66}{24} = 2 \frac{18}{24}$$