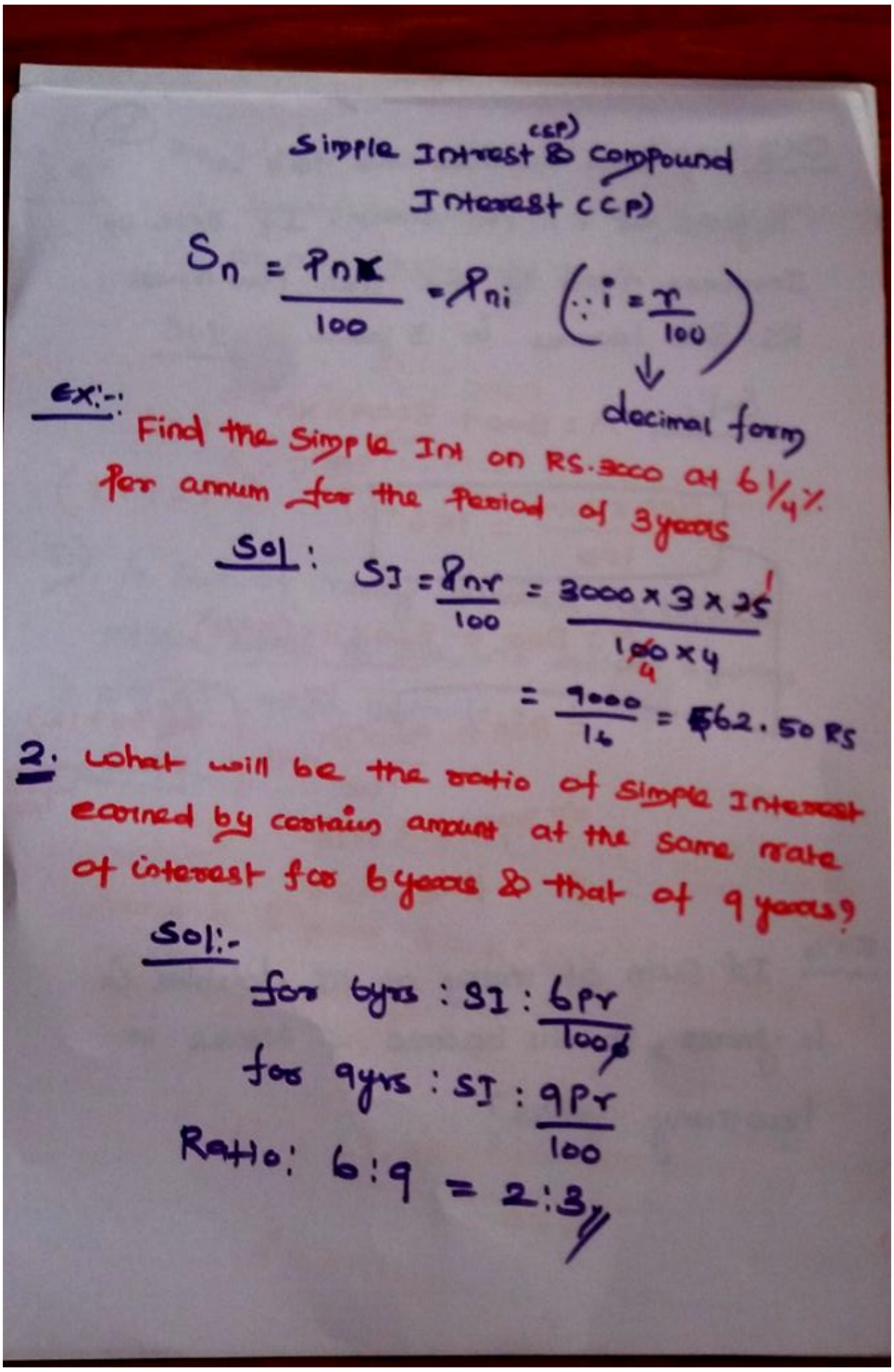
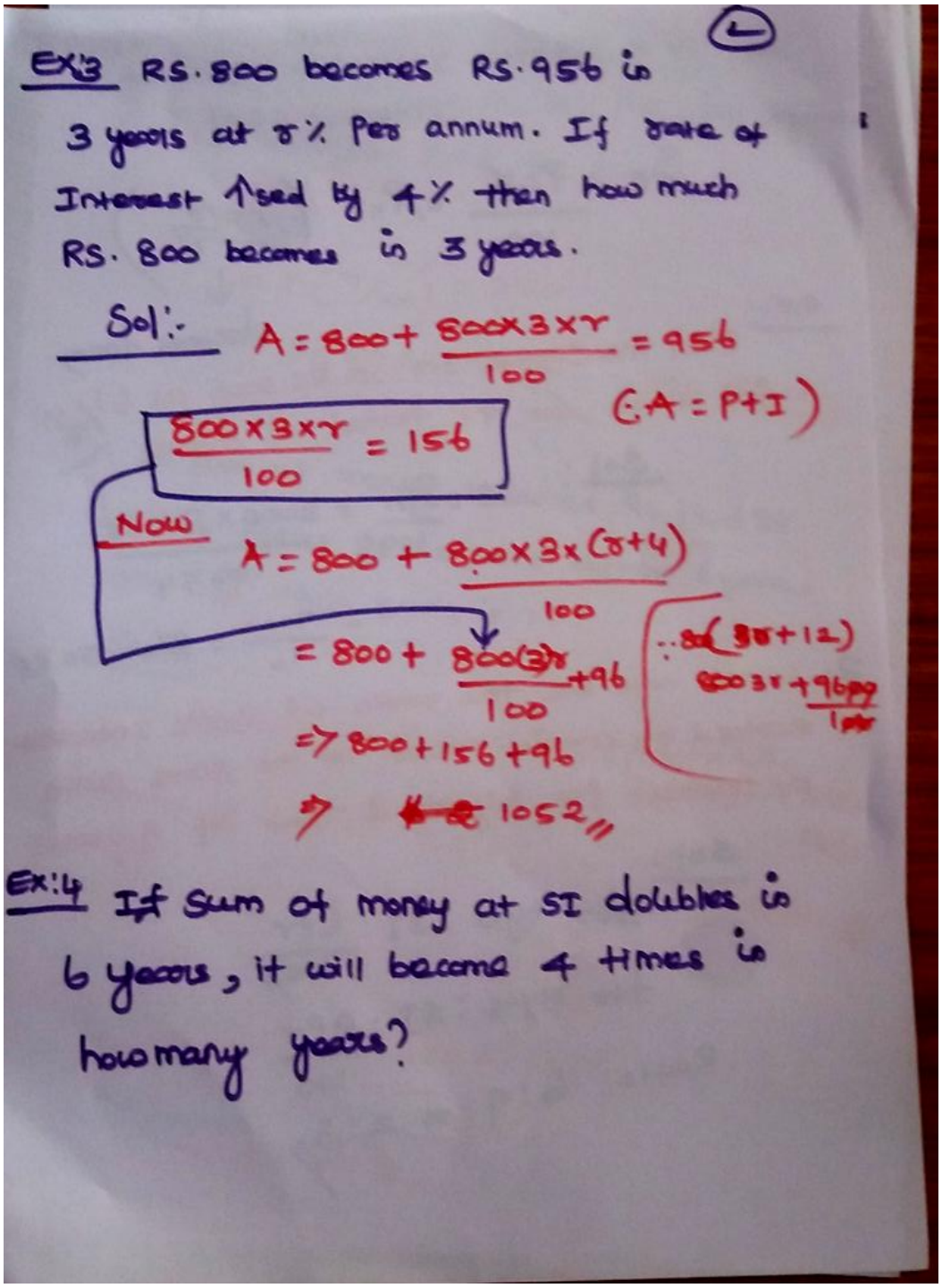
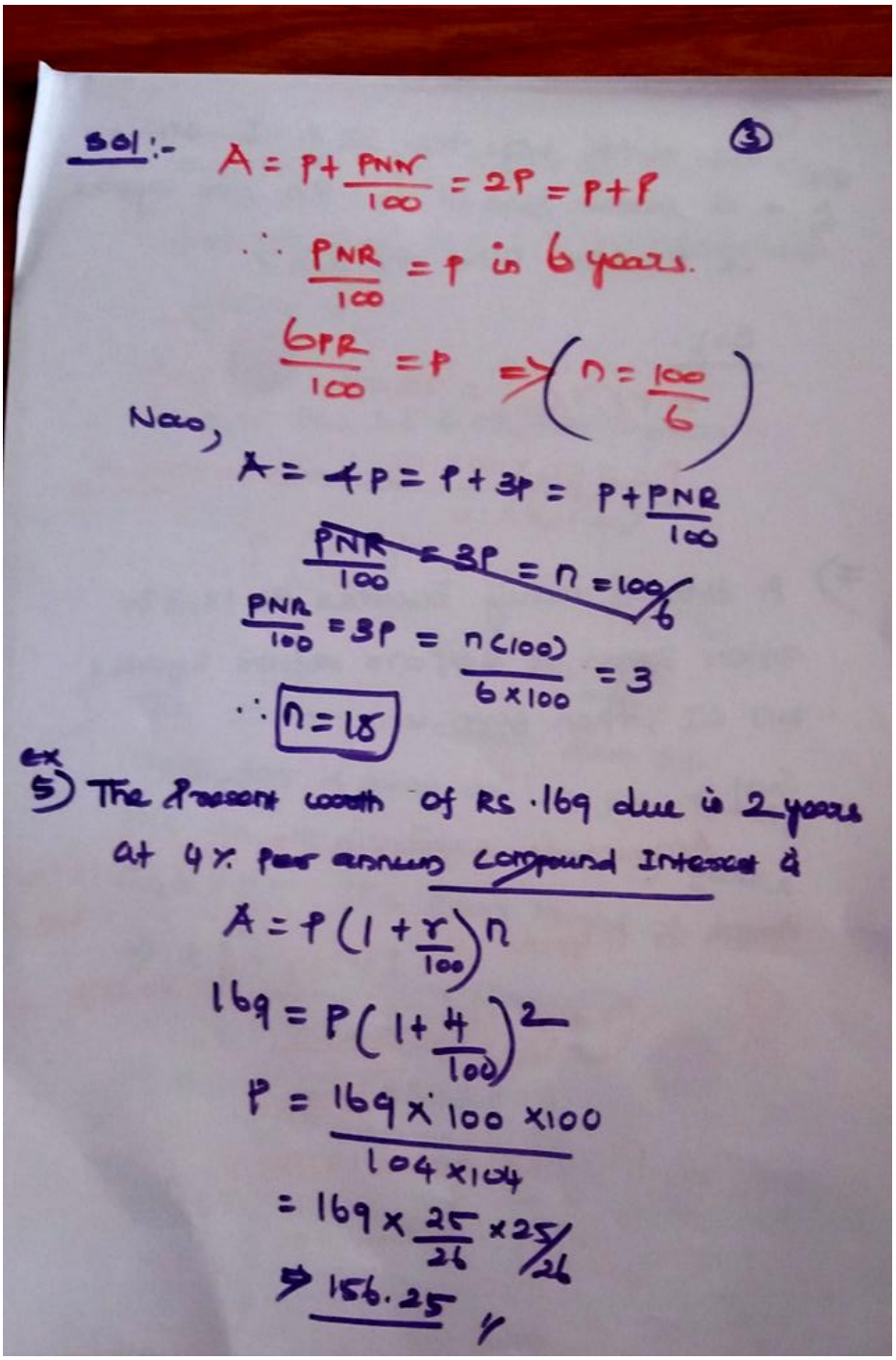

Simple Interest (SI) & compound Interest (CI)
$S_n = \frac{PnR}{100} = Pni$ $\left(\because i = \frac{r}{100}\right)$
↓ decimal form
Ex:-
Find the Simple Int on RS.3000 at 6 1/4 % per annum for the period of 3 years
Sol: $SI = \frac{Pnr}{100} = \frac{3000 \times 3 \times 25}{100 \times 4}$
$= \frac{9000}{16} = 562.50$ RS
2. What will be the ratio of simple Interest earned by certain amount at the same rate of interest for 6 years & that of 9 years?
Sol:-
for 6yrs : SI : $\frac{6Pr}{100}$
for 9yrs : SI : $\frac{9Pr}{100}$
Ratio: 6:9 = 2:3


Ex:3 Rs. 800 becomes Rs. 956 in 3 years at r% Per annum. If rate of Interest ↑sed by 4% then how much Rs. 800 becomes in 3 years.
Sol:- A = 800 + 800x3xr/100 = 956
(∵A = P+I)
800x3xr/100 = 156
Now
A = 800 + 800x3x(r+4)/100
= 800 + 800(3)r/100 + 96
=> 800 + 156 + 96
=> 1052
Ex:4 If sum of money at SI doubles in 6 years, it will become 4 times in how many years?



Sol:- (3)

$A = P + \frac{PNR}{100} = 2P = P + P$

$\therefore \frac{PNR}{100} = P$ in 6 years.

$\frac{6PR}{100} = P \Rightarrow \left(n = \frac{100}{6}\right)$

Now,

$A = 4P = P + 3P = P + \frac{PNR}{100}$

$\frac{PNR}{100} = 3P = n = 100/6$

$\frac{PNR}{100} = 3P = \frac{n(100)}{6 \times 100} = 3$

$\therefore \boxed{n = 18}$

Ex 5) The Present worth of Rs. 169 due in 2 years at 4% per annum compound Interest is

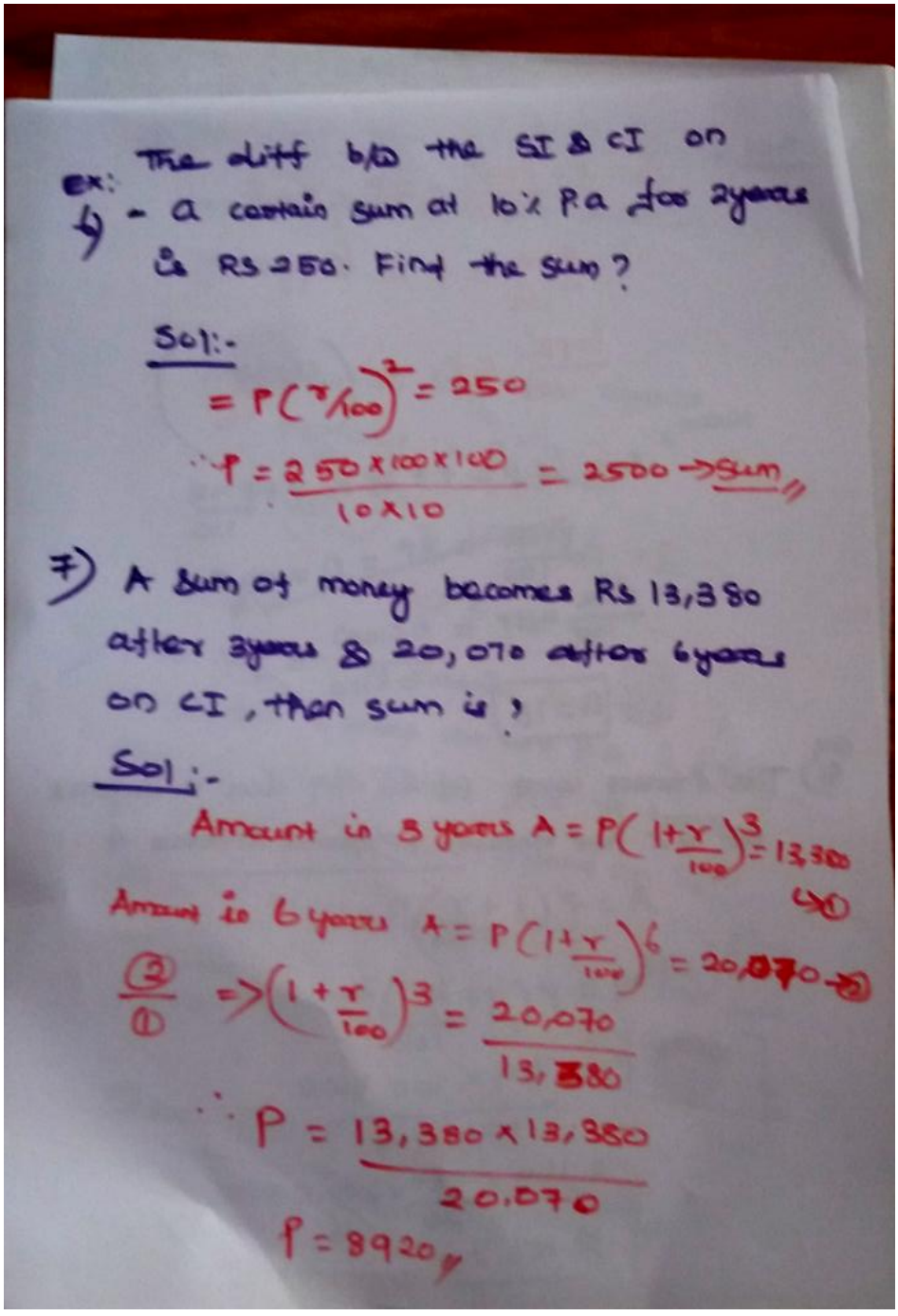
$A = P\left(1 + \frac{r}{100}\right)^n$

$169 = P\left(1 + \frac{4}{100}\right)^2$

$P = \frac{169 \times 100 \times 100}{104 \times 104}$

$= 169 \times \frac{25}{26} \times 25/26$

$\Rightarrow 156.25$



Ex: 6) The diff b/w the SI & CI on a certain sum at 10% P.a for 2 years is Rs 250. Find the sum?

Sol:-

$= P\left(\frac{r}{100}\right)^2 = 250$

$\therefore P = \frac{250 \times 100 \times 100}{10 \times 10} = 2500 \rightarrow$ Sum //

7) A sum of money becomes Rs 13,380 after 3 years & 20,070 after 6 years on CI, then sum is ?

Sol:-

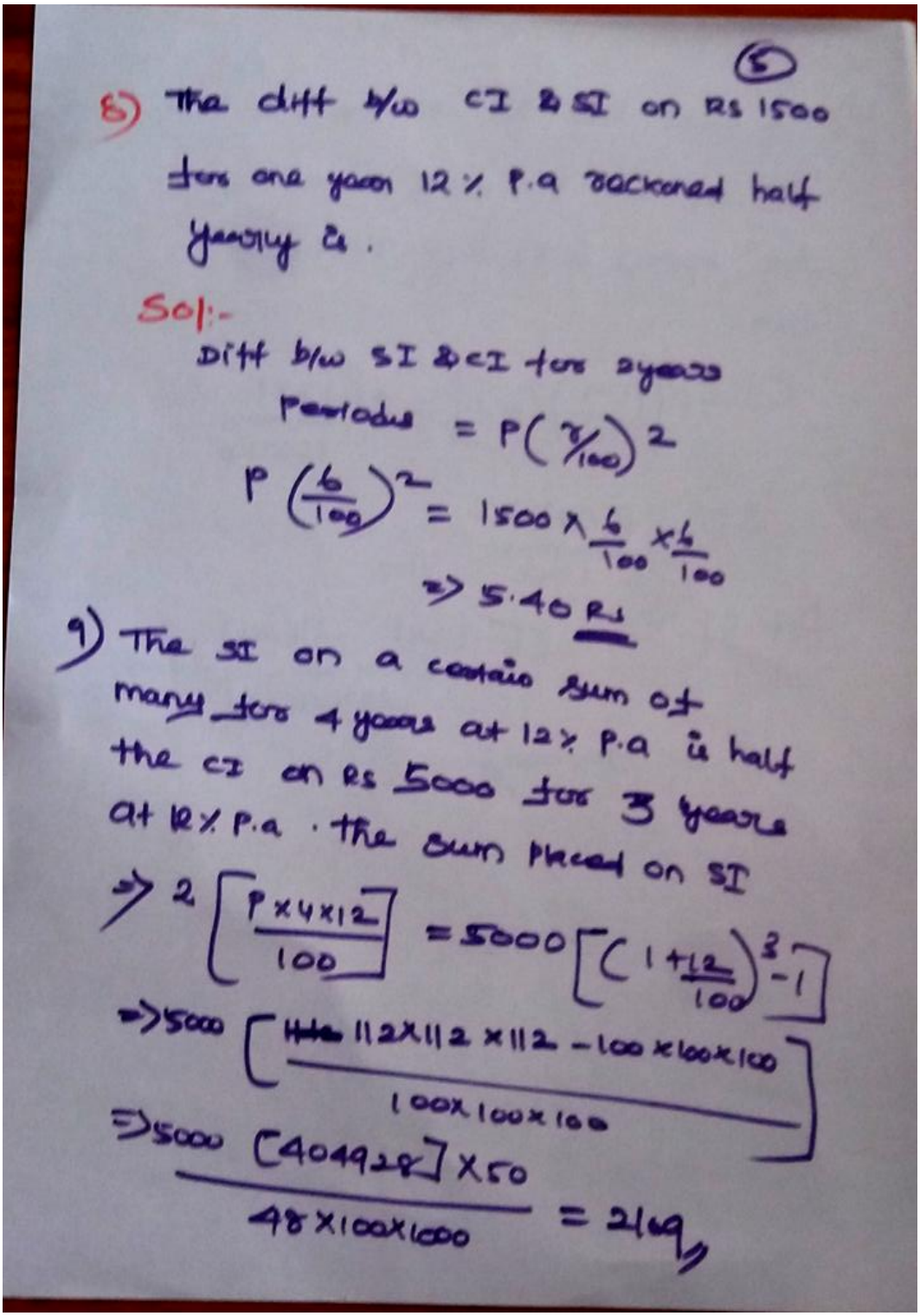
Amount in 3 years $A = P\left(1+\frac{r}{100}\right)^3 = 13,380$ ①

Amount in 6 years $A = P\left(1+\frac{r}{100}\right)^6 = 20,070$ ②

$\frac{②}{①} \Rightarrow \left(1+\frac{r}{100}\right)^3 = \frac{20,070}{13,380}$

$\therefore P = \frac{13,380 \times 13,380}{20,070}$

$P = 8920$



8) The diff b/w CI & SI on Rs 1500 for one years 12% P.a reckoned half yearly is.

Sol:-

Diff b/w SI & CI for 2 years

Periodic $= P\left(\frac{r}{100}\right)^2$

$P\left(\frac{6}{100}\right)^2 = 1500 \times \frac{6}{100} \times \frac{6}{100}$

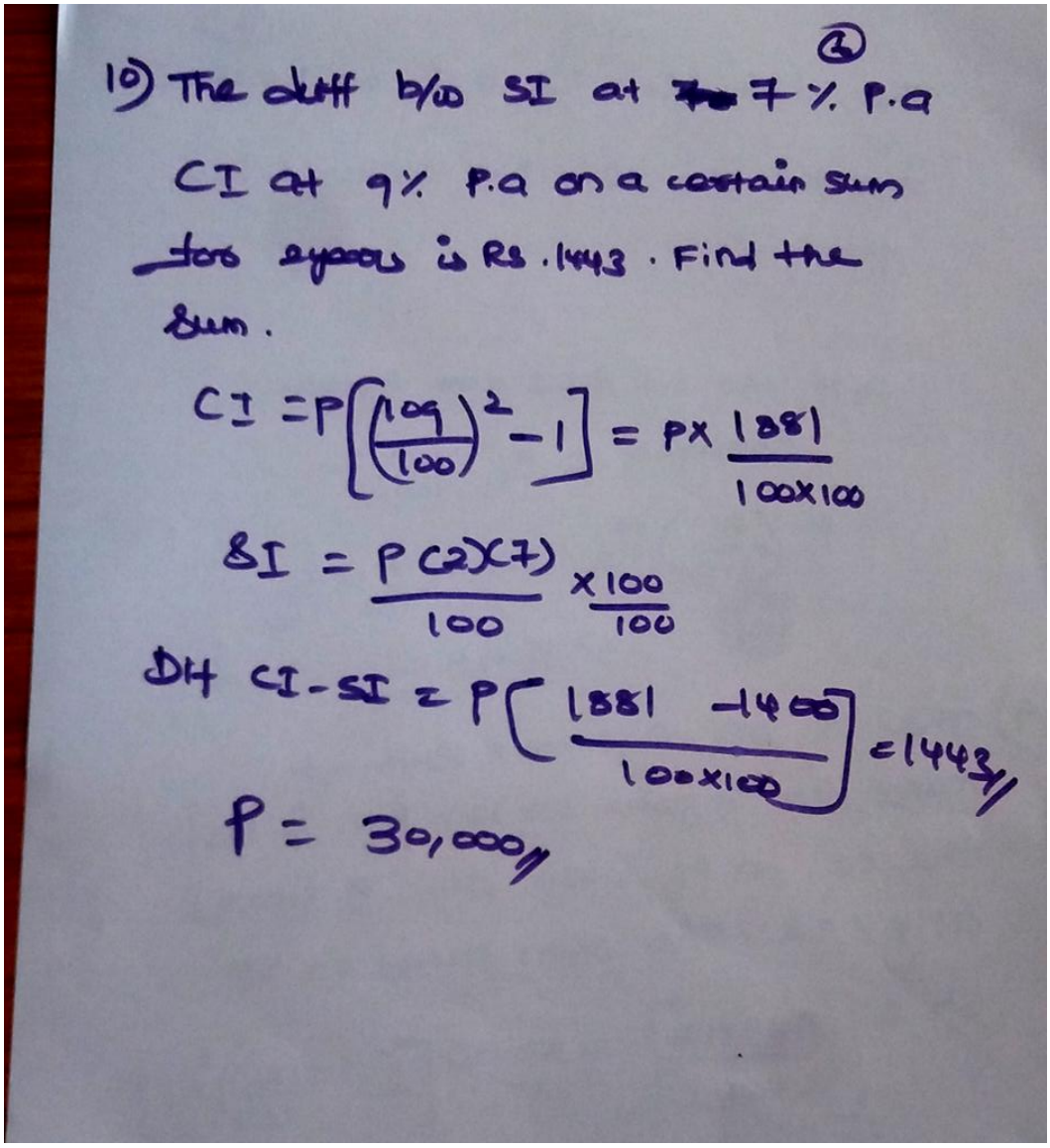
$\Rightarrow 5.40$ Rs

9) The SI on a certain sum of money for 4 years at 12% P.a is half the CI on Rs 5000 for 3 years at 12% P.a. the sum placed on SI

$\Rightarrow 2\left[\frac{P \times 4 \times 12}{100}\right] = 5000\left[\left(1+\frac{12}{100}\right)^3 - 1\right]$

$\Rightarrow 5000\left[\frac{112 \times 112 \times 112 - 100 \times 100 \times 100}{100 \times 100 \times 100}\right]$

$\Rightarrow \frac{5000\ [404928] \times 50}{48 \times 100 \times 1000} = 2104$


10) The diff b/w SI at 7% p.a
CI at 9% p.a on a certain sum for 2 years is Rs. 1443. Find the sum.
CI = P[(109/100)^2 - 1] = P × 1881/100×100
SI = P(2)(7)/100 × 100/100
Diff CI - SI = P[1881 - 1400/100×100] = 1443
P = 30,000