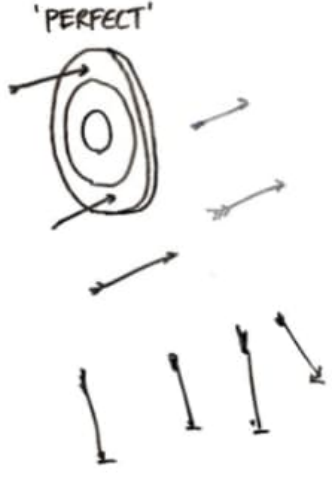
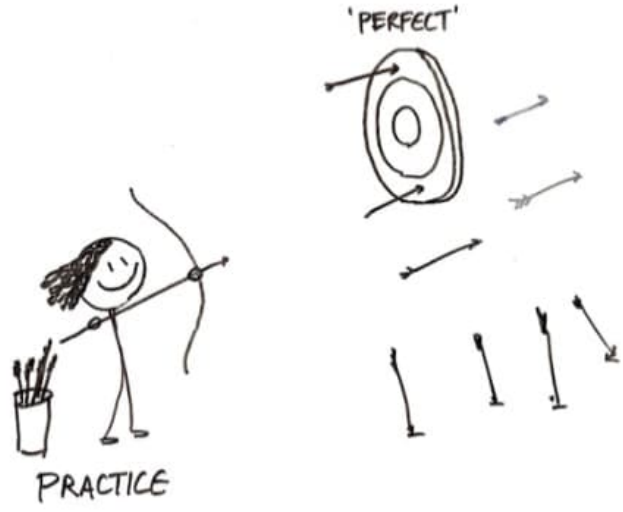
- Practice:
  1. Ratio of the earnings of A and B is 4:7. If the earnings of A increases by 50% and those of B decreased by 25%, the new ratio of their earnings becomes 8:7. What are A's earnings?
  2. Three persons A, B and C divide a certain amount of money such that A's share is Rs. 4 less than half of the total amount, B's share is Rs. 8 more than half of what is left and finally C takes the rest which is Rs. 14. Find the total amount they initially had with them?
  3. In 4 years Raj father will be twice raj age then , where as two years ago his mother was twice his age . If Raj is going to be 32 years old eight years from now then what is the sum of his parents age now.
  4. At the end of 1994 Rohit was half as old as his grandmother. The sum of the years in which they were born is 3844. How old Rohit was at the end of 1999?



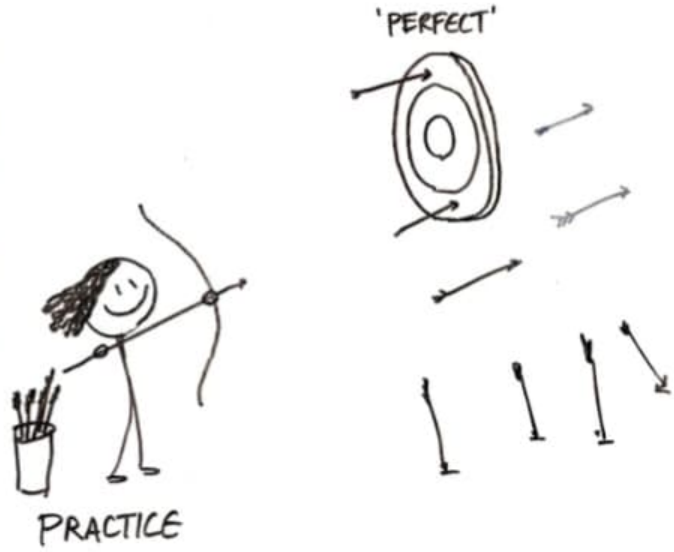
- Practice:
  5. 10 years ago, the average age of 10 people was 33 years. After 3 years, a person of age 40 died. After another 3 years, another person of age 40 died. After another 3 years, another person of age 30 dies. Find the present average age.
  6. After 6 years Raju's father's age will be twice that of the his age and 2 years ago, his mothers age was twice that of Raju's age. What is the sum of Raju's parents' age?
  7. Six years ago Raj's father's age is 6 times the age of Raj. The difference of present ages is 35. What is the sum of their present ages?
  8. A grand father has 3 grand children. Age difference of two children among them is 3. Eldest child age is 3 times the youngest child's age and the eldest child age is two year more than the sum of age of other two children. What is the age of the eldest child?



- Practice:

1. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?
2. A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?
3. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be?
4. A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone would take to do the whole work?

- Practice:
  5. A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days, A alone can finish the remaining work?
  6. 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?
  7. Ravi and Kumar are working on an assignment. Ravi takes 6 hours to type 32 pages on a computer, while Kumar takes 5 hours to type 40 pages. How much time will they take, working together on two different computers to type an assignment of 110 pages?



Ages

1) Ans: Let original earnings be:

A = 4x

B = 7x

New earnings:

. A → 4x + 50% of 4x = 4x + 2x = 6x

B → 7x − 25% of 7x = 7x − (7x/4)

= (21x/4)

New ratio = 6x : 21x/4 = 8 : 7

⇒ (6x) / (21x/4) = 8/7

⇒ (6x × 4) / (21x) = 8/7

(24x) / (21x) = 8/7

24/21 = 8/7 → True.

∴ A = 4x

Final ratio 6x : 21x/4, take LCM to make

Let 6x = 8K ⇒ x = (4K/3)

Then A = 4x = 4(4K/3) = 16K/3

∴ $\boxed{A = 16K/3}$

2 Ans: Let total = T

• A = (1/2)T − 4

• B = (1/2)[T − ((1/2)T − 4)] + 8

• C = 14

From B: (1/2)[T − ((1/2)T − 4)] + 8

$= (1/2)[(1/2)T + 4] + 8$
$= (1/4)T + 2 + 8 = (1/4)T + 10$

Now total = A + B + C
$T = ((1/2)T - 4) + ((1/4)T + 10) + 14$
$T = (3/4)T + 20$
$\Rightarrow T - (3/4)T = 20$
$(1/4)T = 20$
$\Rightarrow T = 80$

3. Ans:- Let current age of Raj = R

⇒ After 4 yrs, father = R + 4 × 2 = 2(R+
So father's age = 2R + 8
Also, 8 yrs from now, Raj = R + 8 = 32 ⇒
R = 24
So, father = 2 × 24 + 8 = 56
Mother: 2 yrs ago, age = 2R = 48 ⇒ Now
= 50
Sum of parent's age = 56 + 50 = 106 yrs

4. Ans: Let Rohit's age in 1999 = x
Then grandmother = 2x
So year of birth:
- Rohit: 1999 − x
- Grandmother: 1999 − 2x

Sum = 3844
$(1999 - x) + (1999 - 2x) = 3844$
$\Rightarrow 3998 - 3x = 3844$
$x = 51.33$ yrs

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Date:

5Ans:- 10 yrs ago, avg = 33 ⇒ Total = 330

So, present total = 330 + 10 × 10 = 430

After 3 yrs, 40-yrs old dies ⇒ total age = 430 + 3 × 9 − 40 = 457

After 3 yrs, another 40 dies ⇒ total = 457 + 3 × 8 − 40 = 481

After 3 yrs, 30 year old dies ⇒ total = 481 + 3 × 7 − 30 = 502 //

People left = 7

So, avg = 502/7 = 71.71 yrs //

6Ans:- Let Raju = x

Father = y, Mother = z

After 6 yrs:

$y + 6 = 2(x + 6) \Rightarrow y = 2x + 6$

2 yrs ago:

$z - 2 = 2(x - 2) \Rightarrow z = 2x - 2$

Sum $= y + z = (2x + 6) + (2x - 2) = 4x + 4$

7Ans:- 6 yrs ago: Father = 6 × Raj ⇒ $y - 6 = 6(x - 6)$

$\Rightarrow y - 6 = 6x - 36$

$\Rightarrow y = 6x - 30$

Also: $y - x = 35$

Substitute: $(6x - 30) - x = 35 \Rightarrow 5x = 65$

$\Rightarrow x = 13$ //

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COMPASS

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Then, $y = 6x13 - 30 = 48$

Sum $= x + y = 13 + 48 = 61$ //

8Ans: Let youngest $= x$

Then, eldest $= 3x$

Also, eldest $=$ (middle + youngest) $+ 2$

$3x = x + m + 2$

$m = 3x - x - 2 = 2x - 2$

age:- youngest $= x$

middle $= 2x - 2$

Eldest $= 3x$

$\therefore$ Sum $= x + 2x - 2 + 3x = 6x - 2$ //

only need eldest: $3x$ //

Time & work

1) Ans:- A's 1 day work $= 1/20$

B's 1 day work $= 1/30$

C's 1 day work $= 1/60$

$\therefore$ B + C's 1 day work $= 1/30 + 1/60 = (2+1)/60$

$= 1/20$

Cycle of 3 days:-

For 2 days $\rightarrow$ A work's alone: $2 \times 1/20 = 1/10$

on 3rd day $\rightarrow$ A + B + C work's together:

$1/20 + 1/30 + 1/60 = 6/60 = 1/10$

$\therefore$ So, every 3 day work done $= 1/10 + 1/10 = 1/5$

$\Rightarrow$ whole work (1) will be done in $3 \times 5 = 15$ days.

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COMPASS

Date :

2 Ans :- A's 1 day work = 1/6

B's 1 day work = 1/8

Work done in 1 day by A, B, C = 1/3

=) C's 1 day work = 1/3 - (1/6 + 1/8) = 1/24

(7/24) = (8 - 7)/24 = 1/24

in 3 days :- A : 3/6 = 1/2

B : 3/8 = 3/8

C : 3/24 = 1/8

Ratio of work = 1/2 : 3/8 : 1/8 = 4 : 3 : 1

So, C's share = 1/8 × 3200 = 400 //

3 Ans :- Let 1 man's 1 day work = M and (boy's

: (6M + 8B) × 10 = 60M + 80B

(26M + 48B) × 2 = 52M + 96B

Eq both : 60M + 80B = 52M + 96B

=) 8M = 16B =) M = 2B

Now, 15 men + 20 boys = 15(2B) + 20B = 50B

Total work = 60M + 80B = 60(2B) + 80B = 200B

Time = Total work / 1-day work

= 200B / 50B = 4 days //

4 Ans :- A's 80% work in 20 days =) Full work in

25 days

A's 1 day work = 1/25

in 3 days : A does = 3/25

M T W T F S S

COMPASS

Date :

Remaining work = 20% = 1/5

=) Work done by B in 3 days = 1/5 - 3/25

= (5-3)/25

= 2/25

=) B's 1 day work = 2/25 ÷ 3 = 2/75

=) Full Work = 1 ÷ (2/75) = 75/2 = 37.5 days

Ans:- A's 1 day work = 1/18

B's 1-day work = 1/15

In 10 days, B did = 10 × 1/15 = 2/3.

=) work remaining = 1 - 2/3 = 1/3

A takes = (1/3) ÷ (1/18) = 6 days //

Ans:- 10 women = 1 work in 7 days =) 1 day work = 1/7

=) 1 women = 1/70

10 children = 1 work in 14 days =) 1 child = 1/140

Now, 5 women + 10 children =

5 × 1/70 + 10 × 1/140 = 1/14 + 1/14 = 1/7

=) It take 7 days //

Ans:- Combined rate = 16/3 + 8 = (16+24)/3

= 40/3 pages/hr

Rate =

where Kavarky pes 40 pages in 5 hrs → 8 Pages/hr

Time = 110 ÷ (40/3) = 110 × 3/40 = 8.25 hrs

= 8 hrs 15 minutes