APTITUDE PRACTICE QUESTIONS

Basic ✓

Q1. Find the value of X, If]

$$\sqrt{1+\frac{27}{169}} = \left(1+\frac{x}{13}\right)$$

$\sqrt{196} = 14$

$\sqrt{169} = 13$

8PM ✓

$$\Rightarrow \sqrt{\frac{169+27}{169}} = \left(1+\frac{x}{13}\right)$$

$$\Rightarrow \sqrt{\frac{196}{169}} = 1+\frac{x}{13}$$

$$\Rightarrow \frac{14}{13} = 1+\frac{x}{13} \Rightarrow$$

$$\frac{14}{13} - 1 = \frac{x}{13}$$

$$\Rightarrow \frac{1}{13} = \frac{x}{13}$$

$$\Rightarrow x = 1 \checkmark$$

APTITUDE PRACTICE QUESTIONS

Q2. A milkman claims to sell milk at its cost price only, but he is making a profit of 20% since he has mixed some amount of water in the milk. What is the percentage of milk in the mixture?

a. 80% ✓ b.250/3% c.75% d.200/3%

✓ 🧍 → CP → SP 20%

CP [100ms → 100 lit] + 20 lit (water)

20% ↓ ↓

[120ms → 120 lit] ✓

(100M + 20W)

1ℓs → 1 lit

CP = 100

SP = 100.

$\frac{100}{120} \times 5 \times 100$

$\frac{250}{3}$ %

Alligation

W	M
0	100ms

CP = 100 ✓

SP = 100 ✓

Profit = 20%

100 − 250/3

250/3

50/3 | 250/3

$SP = CP \times \frac{120}{100} \times \frac{6}{5}$

$100 = CP \times \frac{6}{5}$

$CP = \frac{500}{6} = \frac{250}{3}$

$\frac{250}{3} \times 100$

$\frac{250}{3}$ %

APTITUDE PRACTICE QUESTIONS

Q3. A person could save 10% of his income. But 2 years later, when his income increased by 20%. He could save the same amount only as before. By how much percent has his expenditure increased?

a. 22 2/9% b.23 1/3% c.24 2/9% d.25 2/9%

options are %.

	Income	Exp=90	Save
	100	→	10x
2 year	120 (20%)	Exp=110 →	10x

Ex=90 Ex=110

$\frac{20}{90} \times 100$

$22\frac{2}{9}\%$

$9)200(22$
18
20
18
2

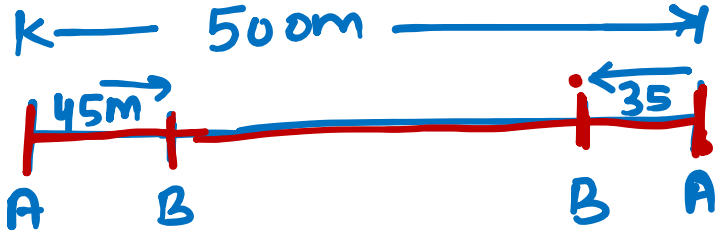
APTITUDE PRACTICE QUESTIONS

Q4. In a 500meter race, B starts 45 meters ahead of A, but A wins the race while B is still 35 meters behind. What is the ratio of speeds of A and B assuming that both start at the same time?

a. 25:21 b.25:20 c.5:3 d.5:7

A

Concept ✓



$D_A : D_B$

$500 : 500-(45+35)$

$500 : 420$

$25 : 21$

Both starts at the same time

$D = S \times t$

$D \propto S$ ✓

D

APTITUDE PRACTICE QUESTIONS

Q5. A person purchases 100pens at a discount of 10%. The net amount of money spent by the person to purchase the pens is Rs.600. The selling expenses incurred by the person are 15% on the net cost price. What should be the selling price for 100 pens in order to earn a profit of 25% ?

a. 802.50 b.811.25 c.862.5 d.875

✓ CP of 100 pens = 600Rs

Some Expense 15% →

15% → 690 (CP) → 25% →

$\frac{600 \times 15}{100} = 90$

$\frac{100 - 10}{100}$ $\frac{100 + \text{Profit}}{100}$

690 × $\frac{125}{100}$ ✓

$\frac{8625}{10}$

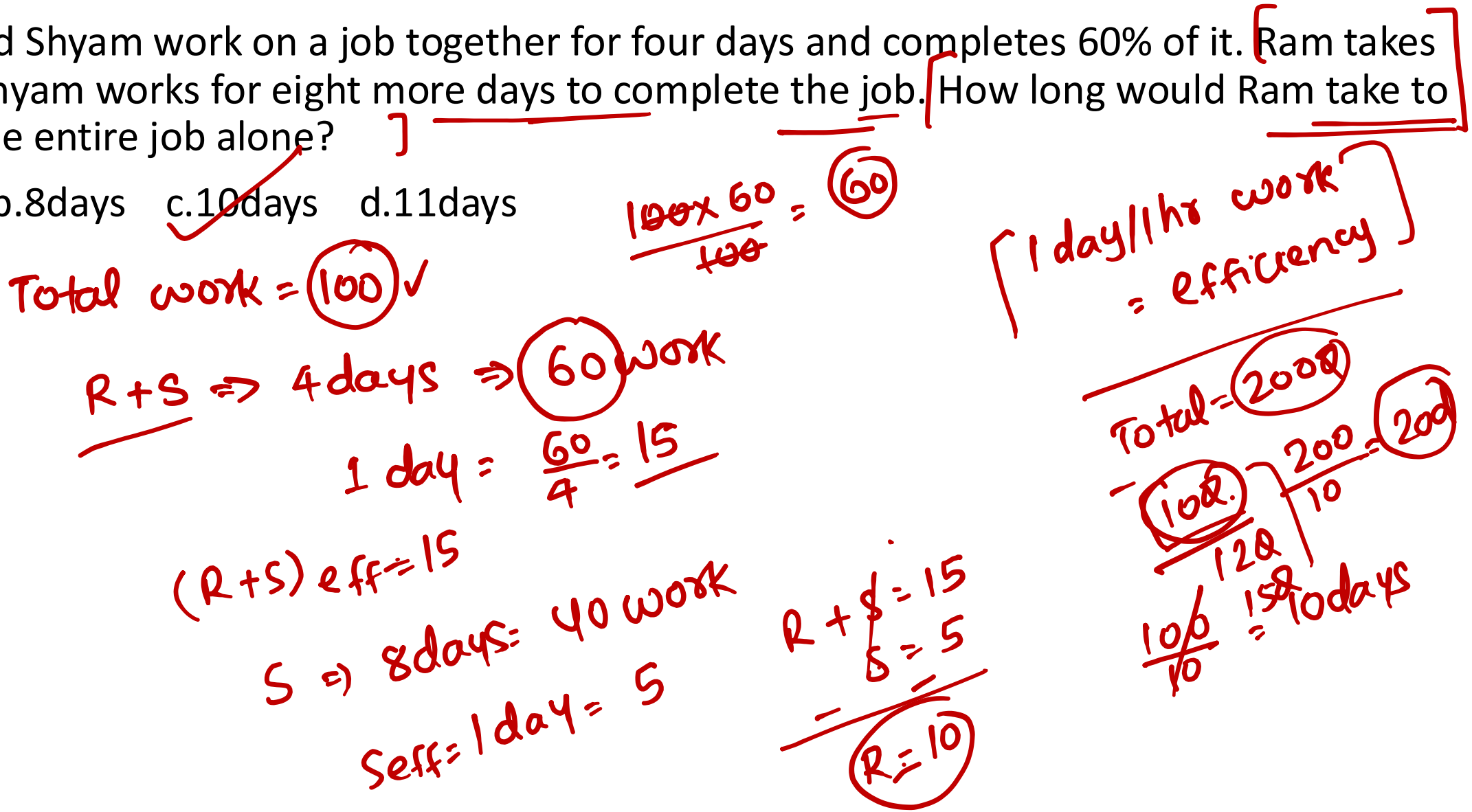
862.5

125 | 4
69
125
750
8625

APTITUDE PRACTICE QUESTIONS

Q6. Ram and Shyam work on a job together for four days and completes 60% of it. Ram takes leave and Shyam works for eight more days to complete the job. How long would Ram take to complete the entire job alone?

a. 6days b.8days c.10days d.11days



APTITUDE PRACTICE QUESTIONS

Q7. If $X = \dfrac{1}{1 + \dfrac{1}{1+X}}$ and $Y = \dfrac{2}{2 + \dfrac{1}{1+Y}}$, then which of the following can be the value of X + Y?

1. (-√5 - √17 + 3)/4
2. (2√5 + √17 - 3)/4 ✓
3. (-√5 + √17 + 1)/4
4. (√5 + √17 - 1)/4

$x = \dfrac{1}{(1+x)+1}{(1+x)}$

$x = \dfrac{1}{1} \times \dfrac{1+x}{x+2}$

$x^2 + 2x = 1 + x$

$\Rightarrow x^2 + x - 1 = 0$

$\dfrac{-1 \pm \sqrt{1-4\times1\times-1}}{2}$

$\dfrac{-1 \pm \sqrt{5}}{2}$

$y = \dfrac{2}{2(1+y)+1}{(1+y)}$

$y = \dfrac{2(1+y)}{3+2y}$

$2y^2 + 3y = 2 + 2y$

$2y^3 + y - 2 = 0$

$\dfrac{-1 \pm \sqrt{1-4\times2\times-2}}{2\times2}$

$y = \dfrac{-1 \pm \sqrt{17}}{4} = \dfrac{\sqrt{17}-1}{4}$ ✓

$\dfrac{2\sqrt{5}-2}{4} + \dfrac{\sqrt{17}-1}{4}$

$\dfrac{2\sqrt{5}+\sqrt{17}-3}{4}$

x+y

$\dfrac{-b \pm \sqrt{b^2-4ac}}{2a}$

$ax^2+bx+c=0$ ✓

Quadratic ✓

$x = \dfrac{\sqrt{5}-1}{2}$ ✓ $\dfrac{2(\sqrt{5}-1)}{\sqrt{4}}$

APTITUDE PRACTICE QUESTIONS

Q8 The average score in an English exam of a class of 45 students in a coaching centre is 52. A group of 6 boys having an average score of 40 leave the class and another group of eight boys having an average score of 43 joins the class. What is the new average score of the class ?

a. 48 b.53 c.49.5 d.52

Avg = Sum / No

Sum = Avg × No

= 52 × 45 = 2340

45 − 6 + 8 = 47

$$\frac{2340 - 6 \times 40 + 8 \times 43}{47}$$

$$\frac{2100 + 344}{47} = \frac{2444}{47} = 52$$

Short md.

$$-6 \times 12 + 8 \times 9$$

$$-72 + 72$$

0

APTITUDE PRACTICE QUESTIONS

Q9. On Rs.9030, the rate of interest for the first year is 12.5%. Second year is 14 2/7% and for the 3rd year is 10% then find the compound interest earned in 3years.?

a. Rs.3172 b. Rs.3721 c. Rs.3741 d. Rs.3714

$P = 9,030$

1st year = $12.5\% = \frac{1}{8}$

2nd year = $14\frac{2}{7}\% = \frac{1}{7}$

3rd year = $10\% = \frac{1}{10}$ ✓

$$\left[C.I = P\left(1+\frac{r}{100}\right)^n - P\right]$$

$$9030\left(1+\frac{1}{8}\right)\times\left(1+\frac{1}{7}\right)\left(1+\frac{1}{10}\right) - 9030$$

$$9030 \times \frac{9}{8} \times \frac{8}{7} \times \frac{11}{10} - 9030$$

$$129 \times 99 - 9030 \quad (100-1)$$

$$12771 - 9030$$

$$3741$$ ✓

$$\frac{12900}{129}$$

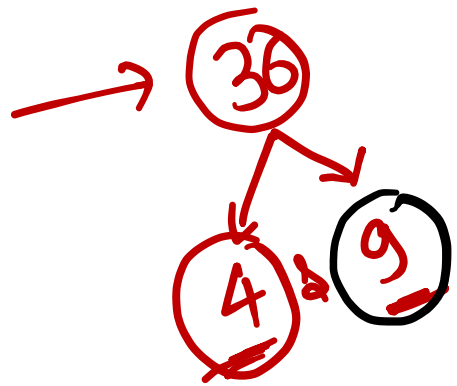
$$12771$$

APTITUDE PRACTICE QUESTIONS

Q10. If the 9-digit number 72x8431y4 is divisible by 36, what is the value of (x/y – y/x) for the smallest possible value of y, given that x and y are natural numbers.?

a. 1 5/7 b. 2 1/10 c. 1 2/5 d. 2 9/10

72x8431y4



$\left[\frac{x}{y} - \frac{y}{x}\right]$

$y = 2$

$x = 5$

72x84312 4

$\frac{4+x}{9}$

$\frac{4+5}{9} =$

$\frac{5}{2} - \frac{2}{5}$

$\frac{25-4}{10}$

$\frac{21}{10}$

$2\frac{1}{10}$

APTITUDE PRACTICE QUESTIONS

Q11. Find the difference between the compound interest and simple interest when a sum of Rs.15,625 is invested for 3 years at 4% per annum?

a. Rs.76 b. Rs.96 c. Rs.56 d. Rs.86

B

$$(C.I - S.I)_3 = \frac{PR^2(300+R)}{100^3}$$

$$= \frac{15625 \times 4 \times 4 \times 304}{100 \times 100 \times 100}$$

$$= \frac{625 \times 4 \times 4 \times 304}{100 \times 100}$$

$$= \frac{25 \times 4}{25} = 4$$

76

APTITUDE PRACTICE QUESTIONS

Q12. If the equation $k(21x^2 + 24) + rx + (14x^2 - 9) = 0$ & $k(7x^2 + 8) + px + (2x^2 - 3) = 0$ have both roots common, then the value of p/r is?

a. 1/3 b. 2/5 c. 4/3 d. 7/5

Quadratic Eqn

$a_1x^2 + b_1x + c_1 = 0$

$a_2x^2 + b_2x + c_2 = 0$

roots: $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

$k(21x^2 + 24) + rx + (14x^2 - 9) = 0$

$21kx^2 + 24k + rx + 14x^2 - 9 = 0$

$(21k + 14)x^2 + rx + (24k - 9) = 0$ ①

$(7k + 2)x^2 + px + (8k - 3) = 0$ ②

$\frac{p}{r} = \frac{8k-3}{24k-9}$

$\frac{p}{r} = 8\frac{8k-3}{3(8k-3)}$

$\frac{p}{r} = \frac{1}{3}$

APTITUDE PRACTICE QUESTIONS

Q13. Successive discount of 12%, 15% and 18% amount to a single discount of x%. Find X?

a. 38.646 b. 36.684 c. 38.664 d. 36.864

APTITUDE PRACTICE QUESTIONS

Q14. A boat takes 20hours to travel downstream from point P to point Q and to come back to a point R which is at midaway between P and Q. if the velocity of the stream is 6km/hr and the speed of the boat in still water is 18km/hr, what is the distance between P and Q?

a. 280km b. 240km c. 320km d. 180km

APTITUDE PRACTICE QUESTIONS

Q15. If the mean of the following data is 15, then find the value of k

a. 7 b.8. c.6 d.10

x	5	10	15	20	25
f	6	K	6	10	5