Time and work

1. A can finish a piece of work in 36 days, and B can finish it in 24 days. Find the time taken by both working together.

Sol:

$$P(A) + P(B) = P(A+B)$$

- $\frac{1}{36} + \frac{1}{24} = \frac{1}{x}$

$2\times$ $3\times$

- $\frac{2+3}{72} = \frac{1}{x}$

- $\frac{5}{72} = \frac{1}{x}$

- $\frac{72}{5} = x$

LCM

2	36, 24
2	18, 12
2	9, 6
3	9, 3
3	3, 1
	1

$3 \times 3 = 9$

$9 \times 2 \quad 18$

$18 \times 2 \quad 36$

$36 \times 2 \quad 72$

Therefore, the time taken by both working together is $\boxed{\text{days } \frac{72}{5}}$

Date: Day:

Q # 2 A can do a work in 12 days, B in 15 days, and C in 20 days. How long will they take together?

Sol:

$$P(A) + P(B) + P(C) = P(A+B+C)$$

1. $\frac{5\times 1}{5\times 12} + \frac{4\times 1}{4\times 15} + \frac{3\times 1}{3\times 20} = \frac{1}{x}$

2. LCM

2	12, 15, 20
2	6, 15, 10
3	3, 15, 5
5	1, 5, 5
	1, 1, 1

3. multiple

$5 \times 3 = 15$

$15 \times 2 = 30$

$30 \times 2 = 60$

3. $\frac{5+4+3}{60}$

4. $\frac{12}{60} = \frac{1}{x}$

5. $\frac{60}{12} = x$

$\frac{60}{12} = 5$

6. ABC will take together 5 days to complete the same work.