GENERAL SCIENCE & ABILITY – MATHEMATICS

ASSIGNMENT # 1

SUBMITTED BY:
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Q: Tariq can do a tailoring job in 6 hours. Sajid does the same job in 4 hours. Irfan does it in 8 hours. Tariq and Sajid start doing the work. Sajid leaves after two hours, and Irfan replaces him. How long would it take to complete the work?

SOL:

Tariq does job = 6 Hours
Sajid does job = 4 Hours
Irfan does job = 8 Hours

Tariq and Sajid together does the job in:

$$\frac{1}{T} = \frac{1}{6} + \frac{1}{4} = \frac{2+3}{12} = \frac{5}{12}$$

$$\Rightarrow T = \frac{12}{5}$$

$$\boxed{T = 2.4 \text{ hrs}}$$

R.W
2 | 6,4
2 | 3,2
3 | 3,1
    | 1,1
LCM = 2×2×3 = 12

   2.4
5) 120
   -10
    20
    20
     ×

Tariq and ~~Sajid~~ Irfan together does the job in:

$$\frac{1}{t} = \frac{1}{6} + \frac{1}{8} = \frac{4+3}{24} = \frac{7}{24}$$

$$t = \frac{24}{7} \approx 3.4 \text{ Hrs.}$$

$$\boxed{t = 3.4 \text{ hrs}}$$

2 | 6,8
2 | 3,4
2 | 3,2
3 | 3,1
   | 1,1
LCM = 2×2×2×3 = 24

   3.4
7) 240
  -21
    30
   -28
     2

Completion of Work by Tariq & Sajid:

$$\frac{2}{2.4} \times 100 = \frac{20}{24} \times 100 = 83\%$$

Remaining work = 100% - 83% = 17%.
So only 17% of work will be needed by Tariq and Irfan to complete the task.

$$\rightarrow \frac{3.4 \times 17}{100} = 3.4 \times 0.17 = 0.58.$$

Hence, the total time taken in completing the work is:

$$2 + 0.58 = 2.58 \text{ hrs.}$$