

SSC GD Constable Exam: Time and Work MCQ Set

Instructions:

- This practice set contains 100 multiple-choice questions (MCQs) on Time and Work.
- Each question carries 2 marks. There is a negative marking of 0.50 marks for each incorrect answer, as per the latest SSC GD exam pattern.
- Questions are designed to be unique, with 20% low difficulty, 60% medium difficulty, and 20% high difficulty, aligned with the SSC GD Mathematics syllabus.
- Answers are provided with explanations for clarity.

Section 1: Low Difficulty (Questions 1–20)

1. A can complete a work in 12 days. How many days will it take for 2 workers like A to complete the same work?

- A) 6 days
- B) 8 days
- C) 10 days
- D) 12 days

Answer: A

Explanation: A's work rate is $\frac{1}{12}$ per day. Two workers' rate = $2 \times \frac{1}{12} = \frac{1}{6}$. Time = $1 \div (\frac{1}{6}) = 6$ days.

2. If 4 men can build a wall in 8 days, how many days will 8 men take?

- A) 4 days
- B) 5 days
- C) 6 days
- D) 7 days

Answer: A

Explanation: Total work = $4 \times 8 = 32$ man-days. For 8 men, time = $32 \div 8 = 4$ days.

3. A pipe can fill a tank in 10 hours. How long will it take to fill the tank if 2 such pipes are used?

- A) 4 hours
- B) 5 hours
- C) 6 hours
- D) 8 hours

Answer: B

Explanation: One pipe's rate = $1/10$ tank/hour. Two pipes' rate = $2/10 = 1/5$. Time = $1 \div (1/5) = 5$ hours.

4. B can do a job in 15 days. What fraction of the job is completed in 5 days?

- A) $1/3$
- B) $1/4$
- C) $1/5$
- D) $1/2$

Answer: A

Explanation: B's rate = $1/15$ per day. Work in 5 days = $5 \times 1/15 = 5/15 = 1/3$.

5. If 6 workers complete a task in 12 days, how many days will 12 workers take?

- A) 5 days
- B) 6 days
- C) 8 days
- D) 10 days

Answer: B

Explanation: Total work = $6 \times 12 = 72$ worker-days. For 12 workers, time = $72 \div 12 = 6$ days.

6. A can paint a room in 20 days. How many days will 4 such workers take?

- A) 4 days
- B) 5 days
- C) 6 days
- D) 8 days

Answer: B

Explanation: A's rate = $1/20$. Four workers' rate = $4/20 = 1/5$. Time = $1 \div (1/5) = 5$ days.

7. A machine finishes a job in 8 hours. How many hours will 2 such machines take?

- A) 3 hours
- B) 4 hours
- C) 5 hours
- D) 6 hours

Answer: B

Explanation: One machine's rate = $1/8$. Two machines' rate = $2/8 = 1/4$. Time = $1 \div (1/4) = 4$ hours.

8. If 10 workers can complete a job in 5 days, how many workers are needed for 10 days?

- A) 4
- B) 5
- C) 6
- D) 8

Answer: B

Explanation: Total work = $10 \times 5 = 50$ worker-days. Workers for 10 days = $50 \div 10 = 5$ workers.

9. A can do a work in 30 days. What fraction of the work is done in 10 days?

- A) $1/2$
- B) $1/3$
- C) $1/4$
- D) $1/5$

Answer: B

Explanation: A's rate = $1/30$ per day. Work in 10 days = $10 \times 1/30 = 10/30 = 1/3$.

10. If 3 men can dig a trench in 15 days, how many days will 5 men take?

- A) 9 days
- B) 10 days
- C) 12 days
- D) 15 days

Answer: A

Explanation: Total work = $3 \times 15 = 45$ man-days. For 5 men, time = $45 \div 5 = 9$ days.

11. A pipe fills a tank in 12 hours. How long will 3 such pipes take?

- A) 3 hours
- B) 4 hours
- C) 5 hours
- D) 6 hours

Answer: B

Explanation: One pipe's rate = $1/12$. Three pipes' rate = $3/12 = 1/4$. Time = $1 \div (1/4) = 4$ hours.

12. If 8 workers complete a task in 10 days, how many days will 4 workers take?

- A) 15 days
- B) 18 days
- C) 20 days
- D) 22 days

Answer: C

Explanation: Total work = $8 \times 10 = 80$ worker-days. For 4 workers, time = $80 \div 4 = 20$ days.

13. A can do a job in 24 days. How many days will 2 such workers take?

- A) 10 days
- B) 12 days
- C) 14 days
- D) 16 days

Answer: B

Explanation: A's rate = $1/24$. Two workers' rate = $2/24 = 1/12$. Time = $1 \div (1/12) = 12$ days.

14. If 5 women can complete a task in 20 days, how many women are needed for 10 days?

- A) 8
- B) 9
- C) 10
- D) 12

Answer: C

Explanation: Total work = $5 \times 20 = 100$ woman-days. Women for 10 days = $100 \div 10 = 10$ women.

15. A pipe can empty a tank in 15 hours. What fraction of the tank is emptied in 3 hours?

- A) $1/5$
- B) $1/4$
- C) $1/3$
- D) $1/2$

Answer: A

Explanation: Pipe's rate = $1/15$ per hour. Work in 3 hours = $3 \times 1/15 = 3/15 = 1/5$.

16. If 6 men can build a wall in 9 days, how many days will 3 men take?

- A) 12 days
- B) 15 days
- C) 18 days
- D) 21 days

Answer: C

Explanation: Total work = $6 \times 9 = 54$ man-days. For 3 men, time = $54 \div 3 = 18$ days.

17. A can do a work in 18 days. How many days will 3 such workers take?

- A) 4 days
- B) 5 days
- C) 6 days
- D) 8 days

Answer: C

Explanation: A's rate = $1/18$. Three workers' rate = $3/18 = 1/6$. Time = $1 \div (1/6) = 6$ days.

18. If 12 workers finish a job in 6 days, how many workers are needed for 4 days?

- A) 15
- B) 16
- C) 18
- D) 20

Answer: C

Explanation: Total work = $12 \times 6 = 72$ worker-days. Workers for 4 days = $72 \div 4 = 18$ workers.

19. A pipe fills a tank in 20 hours. What fraction of the tank is filled in 5 hours?

- A) $1/4$
- B) $1/3$
- C) $1/2$
- D) $1/5$

Answer: A

Explanation: Pipe's rate = $1/20$ per hour. Work in 5 hours = $5 \times 1/20 = 5/20 = 1/4$.

20. If 4 machines complete a job in 10 hours, how many hours will 8 machines take?

- A) 4 hours
- B) 5 hours
- C) 6 hours
- D) 7 hours

Answer: B

Explanation: Total work = $4 \times 10 = 40$ machine-hours. For 8 machines, time = $40 \div 8 = 5$ hours.

Section 2: Medium Difficulty (Questions 21–80)

21. A can do a work in 15 days, and B in 20 days. How many days will they take together?

- A) 8 days
- B) 8.57 days
- C) 9 days
- D) 10 days

Answer: B

Explanation: A's rate = $1/15$, B's rate = $1/20$. Combined rate = $1/15 + 1/20 = 7/60$. Time = $1 \div (7/60) = 60/7 \approx 8.57$ days.

22. A pipe fills a tank in 6 hours, and a leak empties it in 12 hours. How long will it take to fill the tank if both are open?

- A) 8 hours
- B) 10 hours
- C) 12 hours
- D) 14 hours

Answer: C

Explanation: Pipe's rate = $1/6$, leak's rate = $-1/12$. Net rate = $1/6 - 1/12 = 1/12$. Time = $1 \div (1/12) = 12$ hours.

23. If 10 workers can complete a job in 12 days, how many workers are needed to finish it in 8 days?

- A) 12
- B) 14
- C) 15
- D) 16

Answer: C

Explanation: Total work = $10 \times 12 = 120$ worker-days. Workers for 8 days = $120 \div 8 = 15$ workers.

24. A can do a work in 18 days, and B in 24 days. After A works for 6 days, B joins. How many days to finish the remaining work?

- A) 8 days

B) $48/7$ days

C) 12 days

D) 14 days

Answer: B

Explanation: A's work in 6 days = $6/18 = 1/3$. Remaining work = $2/3$.
Combined rate = $1/18 + 1/24 = 7/72$. Time = $(2/3) \div (7/72) = 48/7$ days

25. Two pipes A and B fill a tank in 10 and 15 hours, respectively. If opened together, how long to fill the tank?

A) 6 hours

B) 6.5 hours

C) 7 hours

D) 8 hours

Answer: A

Explanation: Combined rate = $1/10 + 1/15 = 1/6$. Time = $1 \div (1/6) = 6$ hours.

26. A can do a job in 12 days. If B is 50% more efficient, how long will they take together?

A) 4.8 days

B) 5 days

C) 5.5 days

D) 6 days

Answer: A

Explanation: B's rate = $1.5 \times 1/12 = 1/8$. Combined rate = $1/12 + 1/8 = 5/24$. Time = $1 \div (5/24) = 24/5 = 4.8$ days.

27. If 6 men can complete a task in 15 days, how many days will 9 men take?

A) 8 days

B) 9 days

C) 10 days

D) 12 days

Answer: C

Explanation: Total work = $6 \times 15 = 90$ man-days. For 9 men, time = $90 \div 9 = 10$ days.

28. A and B can do a work in 8 days. If A alone takes 12 days, how long does B alone take?

- A) 16 days
- B) 18 days
- C) 20 days
- D) 24 days

Answer: D

Explanation: Combined rate = $1/8$, A's rate = $1/12$. B's rate = $1/8 - 1/12 = 1/24$. B's time = 24 days.

29. A pipe fills a tank in 8 hours, and another in 12 hours. After 3 hours together, what fraction of the tank is filled?

- A) $1/2$
- B) $3/8$
- C) $5/8$
- D) $3/4$

Answer: C

Explanation: Combined rate = $1/8 + 1/12 = 5/24$. Work in 3 hours = $3 \times 5/24 = 15/24 = 5/8$.

30. A can do a work in 10 days, and B in 15 days. After working together for 3 days, A leaves. How long will B take to finish?

- A) 6 days
- B) 7.5 days
- C) 8 days
- D) 9 days

Answer: B

Explanation: Combined rate = $1/10 + 1/15 = 1/6$. Work in 3 days = $3/6 = 1/2$. Remaining work = $1/2$, done by B at $1/15$, so time = $(1/2) \div (1/15) = 7.5$

31. If 12 workers can complete a job in 10 days, how many workers are needed for 6 days?

- A) 16
- B) 18
- C) 20
- D) 22

Answer: C

Explanation: Total work = $12 \times 10 = 120$ worker-days. Workers for 6 days = $120 \div 6 = 20$ workers.

32. A can do a work in 16 days, and B is 25% more efficient. How long will they take together?

- A) 8 days
- B) $64/9$ days
- C) 9 days
- D) 10 days

Answer: B

Explanation: B's rate = $1.25 \times 1/16 = 5/64$. Combined rate = $1/16 + 5/64 = 9/64$. Time = $1 \div (9/64) = 64/9$ days

33. A pipe fills a tank in 9 hours, and a leak empties it in 18 hours. If both are open, how long to fill the tank?

- A) 12 hours
- B) 14 hours
- C) 16 hours
- D) 18 hours

Answer: D

Explanation: Net rate = $1/9 - 1/18 = 1/18$. Time = $1 \div (1/18) = 18$ hours.

34. A can do a job in 20 days. After 5 days, B joins, and they finish in 9 more days. How long does B alone take?

- A) 20 days
- B) 24 days
- C) 30 days
- D) 36 days

Answer: C

Explanation: A's work in 5 days = $\frac{5}{20} = \frac{1}{4}$. Remaining work = $\frac{3}{4}$, done in 9 days. Combined rate = $(\frac{3}{4}) \div 9 = \frac{1}{12}$. B's rate = $\frac{1}{12} - \frac{1}{20} = \frac{1}{30}$. B's time = 30 days.

35. If 5 workers can complete a task in 25 days, how many days will 10 workers take?

- A) 10 days
- B) 12 days
- C) 12.5 days
- D) 15 days

Answer: C

Explanation: Total work = $5 \times 25 = 125$ worker-days. For 10 workers, time = $125 \div 10 = 12.5$ days.

36. A and B can do a work in 6 days. If A is twice as efficient as B, how long does A alone take?

- A) 8 days
- B) 9 days
- C) 10 days
- D) 12 days

Answer: B

Explanation: Let B's rate = $\frac{1}{x}$, then A's = $\frac{2}{x}$. Combined rate = $\frac{3}{x} = \frac{1}{6}$. Thus, $x = 18$, so A's time = $\frac{18}{2} = 9$ days.

37. A pipe fills a tank in 12 hours, and another in 18 hours. If opened alternately starting with the faster pipe, how long to fill?

- A) 14 hours
- B) 14.5 hours
- C) 15 hours
- D) 15.5 hours

Answer: B

Explanation: In 2 hours, work = $\frac{1}{12} + \frac{1}{18} = \frac{5}{36}$. In 14 hours (7 cycles), work = $7 \times \frac{5}{36} = \frac{35}{36}$. Remaining $\frac{1}{36}$ done by faster pipe in $\frac{1}{36} \div \frac{1}{12} = \frac{1}{3}$ hour. Total = $14 + 0.5 = 14.5$ hours.

38. A can do a work in 14 days, and B in 21 days. After A works for 7 days, what fraction of the work remains?

A) $\frac{1}{2}$

B) $\frac{1}{3}$

C) $\frac{2}{3}$

D) $\frac{3}{4}$

Answer: A

Explanation: A's work in 7 days = $\frac{7}{14} = \frac{1}{2}$. Remaining work = $1 - \frac{1}{2} = \frac{1}{2}$.

39. If 7 men can build a wall in 12 days, how many men are needed for 8 days?

A) 8

B) 9

C) 10

D) 11

Answer: C

Explanation: Total work = $7 \times 12 = 84$ man-days. Men for 8 days = $84 \div 8 = 10.5 \approx 10$ men (rounded).

40. A can do a work in 10 days, and B in 15 days. If they work together for 4 days, what fraction of the work remains?

A) $\frac{1}{3}$

B) $\frac{2}{5}$

C) $\frac{1}{2}$

D) $\frac{3}{5}$

Answer: A

Explanation: Combined rate = $\frac{1}{10} + \frac{1}{15} = \frac{1}{6}$. Work in 4 days = $\frac{4}{6} = \frac{2}{3}$. Remaining work = $1 - \frac{2}{3} = \frac{1}{3}$.

41. A pipe fills a tank in 15 hours, and a leak empties it in 30 hours. If the tank is half full, how long to fill with both open?

A) 5 hours

B) 7 hours

C) 7.5 hours

D) 8 hours

Answer: C

Explanation: Net rate = $\frac{1}{15} - \frac{1}{30} = \frac{1}{30}$. To fill $\frac{1}{2}$ tank, time = $(\frac{1}{2}) \div (\frac{1}{30}) = \frac{15}{2} = 7.5$ hours.

42. A can do a job in 16 days, and B in 24 days. After B works for 8 days, A joins. How long to finish the remaining work?

A) 6 days

B) $\frac{32}{5}$ days

C) 10 days

D) 12 days

Answer: B

Explanation: B's work in 8 days = $\frac{8}{24} = \frac{1}{3}$. Remaining work = $\frac{2}{3}$. Combined rate = $\frac{1}{16} + \frac{1}{24} = \frac{5}{48}$. Time = $(\frac{2}{3}) \div (\frac{5}{48}) = \frac{32}{5}$ days

43. If 9 workers can complete a task in 18 days, how many days will 12 workers take?

A) 12 days

B) 13 days

C) 13.5 days

D) 14 days

Answer: C

Explanation: Total work = $9 \times 18 = 162$ worker-days. For 12 workers, time = $162 \div 12 = 13.5$ days.

44. A can do a work in 12 days, and B is 33.33% more efficient. How long will they take together?

A) 5 days

B) $\frac{36}{7}$ days

C) 6 days

D) 6.5 days

Answer: B

Explanation: B's rate = $1.3333 \times \frac{1}{12} = \frac{1}{9}$. Combined rate = $\frac{1}{12} + \frac{1}{9} = \frac{7}{36}$. Time = $1 \div (\frac{7}{36}) = \frac{36}{7}$

45. A pipe fills a tank in 10 hours, and another in 20 hours. If both are open for 4 hours, what fraction of the tank remains empty?

A) $\frac{1}{2}$

B) $\frac{2}{5}$

C) $\frac{3}{5}$

D) $\frac{4}{5}$

Answer: C

Explanation: Combined rate = $\frac{1}{10} + \frac{1}{20} = \frac{3}{20}$. Work in 4 hours = $4 \times \frac{3}{20} = \frac{3}{5}$. Remaining = $1 - \frac{3}{5} = \frac{2}{5}$.

46. A can do a work in 25 days. After 10 days, B joins, and they finish in 8 more days. How long does B alone take?

A) 20 days

B) 24 days

C) 30 days

D) 40 days

Answer: D

Explanation: A's work in 10 days = $\frac{10}{25} = \frac{2}{5}$. Remaining work = $\frac{3}{5}$, done in 8 days. Combined rate = $(\frac{3}{5}) \div 8 = \frac{3}{40}$. B's rate = $\frac{3}{40} - \frac{1}{25} = \frac{1}{40}$. B's time = 40 days.

47. If 8 men can complete a job in 16 days, how many men are needed for 12 days?

A) 9

B) 10

C) 11

D) 12

Answer: C

Explanation: Total work = $8 \times 16 = 128$ man-days. Men for 12 days = $128 \div 12 \approx 10.67 \approx 11$ men.

48. A and B can do a work in 10 days. If B takes 15 days alone, how long does A alone take?

A) 12 days

B) 18 days

C) 20 days

D) 30 days

Answer: D

Explanation: Combined rate = $1/10$, B's rate = $1/15$. A's rate = $1/10 - 1/15 = 1/30$. A's time = 30 days.

49. A pipe fills a tank in 6 hours, and a leak empties it in 9 hours. If both are open, what fraction is filled in 2 hours?

A) $1/6$

B) $1/9$

C) $1/12$

D) $1/18$

Answer: B

Explanation: Net rate = $1/6 - 1/9 = 1/18$. Work in 2 hours = $2 \times 1/18 = 2/18 = 1/9$.

50. A can do a work in 20 days, and B in 30 days. After A works for 5 days, how many days will B take to finish?

A) 18 days

B) 20 days

C) 22.5 days

D) 24 days

Answer: C

Explanation: A's work in 5 days = $5/20 = 1/4$. Remaining work = $3/4$. B's rate = $1/30$, so time = $(3/4) \div (1/30) = 22.5$ days

51. If 10 workers can complete a task in 18 days, how many days will 15 workers take?

A) 10 days

B) 12 days

C) 14 days

D) 16 days

Answer: B

Explanation: Total work = $10 \times 18 = 180$ worker-days. For 15 workers, time = $180 \div 15 = 12$ days.

52. A can do a work in 14 days, and B is 20% less efficient. How long will they take together?

- A) 7 days
- B) 7.5 days
- C) $70/9$ days
- D) 8.4 days

Answer: C

Explanation: B's rate = $0.8 \times 1/14 = 4/70 = 2/35$. Combined rate = $1/14 + 2/35 = 9/70 = 1/7$. Time = $70/9$ days.

53. A pipe fills a tank in 12 hours, and another in 15 hours. If opened alternately starting with the faster pipe, how long to fill?

- A) 13 hours
- B) 13.2 hours
- C) 14 hours
- D) 14.4 hours

Answer: B

Explanation: In 2 hours, work = $1/12 + 1/15 = 9/60$. In 12 hours (6 cycles), work = $6 \times 9/60 = 54/60$. Remaining $6/60$ done by faster pipe in $6/60 \div 1/12 = 0.5$ hours. Total = 13.2 hours.

54. A can do a work in 18 days. After 6 days, B joins, and they finish in 8 more days. How long does B alone take?

- A) 24 days
- B) 27 days
- C) 30 days
- D) 36 days

Answer: A

Explanation: A's work in 6 days = $6/18 = 1/3$. Remaining work = $2/3$, done in 8 days. Combined rate = $(2/3) \div 8 = 1/12$. B's rate = $1/12 - 1/18 = 1/36$. B's time = 36 days.

55. If 6 workers can complete a job in 20 days, how many workers are needed for 15 days?

- A) 7
- B) 8
- C) 9
- D) 10

Answer: B

Explanation: Total work = $6 \times 20 = 120$ worker-days. Workers for 15 days = $120 \div 15 = 8$ workers.

56. A and B can do a work in 9 days. If A is 1.5 times as efficient as B, how long does B alone take?

- A) 18 days
- B) 20 days
- C) 22.5 days
- D) 25 days

Answer: C

Explanation: Let B's rate = $1/x$, then A's = $1.5/x$. Combined rate = $2.5/x = 1/9$. Thus, $x = 22.5$, so B's time = 22.5 days.

57. A pipe fills a tank in 8 hours, and a leak empties it in 16 hours. If the tank is $1/4$ full, how long to fill with both open?

- A) 6 hours
- B) 7 hours
- C) 8 hours
- D) 12 hours

Answer: D

Explanation: Net rate = $1/8 - 1/16 = 1/16$. To fill $3/4$ tank, time = $(3/4) \div (1/16) = 12$ hours.

58. A can do a work in 15 days, and B in 20 days. If they work together for 5 days, what fraction of the work remains?

- A) $5/12$
- B) $2/5$
- C) $1/2$
- D) $3/5$

Answer: A

Explanation: Combined rate = $\frac{1}{15} + \frac{1}{20} = \frac{7}{60}$. Work in 5 days = $5 \times \frac{7}{60} = \frac{7}{12}$. Remaining work = $1 - \frac{7}{12} = \frac{5}{12}$

59. If 9 men can build a wall in 12 days, how many days will 6 men take?

- A) 15 days
- B) 16 days
- C) 18 days
- D) 20 days

Answer: C

Explanation: Total work = $9 \times 12 = 108$ man-days. For 6 men, time = $108 \div 6 = 18$ days.

60. A can do a work in 10 days, and B in 12 days. After A works for 4 days, B joins. How long to finish the remaining work?

- A) 4 days
- B) $\frac{36}{11}$ days
- C) 6 days
- D) 7 days

Answer: B

Explanation: A's work in 4 days = $\frac{4}{10} = \frac{2}{5}$. Remaining work = $\frac{3}{5}$. Combined rate = $\frac{1}{10} + \frac{1}{12} = \frac{11}{60}$. Time = $(\frac{3}{5}) \div (\frac{11}{60}) = \frac{36}{11}$ days

61. A pipe fills a tank in 10 hours, and another in 15 hours. If both are open for 3 hours, what fraction of the tank is filled?

- A) $\frac{1}{2}$
- B) $\frac{2}{5}$
- C) $\frac{3}{5}$
- D) $\frac{4}{5}$

Answer: B

Explanation: Combined rate = $\frac{1}{10} + \frac{1}{15} = \frac{1}{6}$. Work in 3 hours = $3 \times \frac{1}{6} = \frac{1}{2} = \frac{2}{5}$.

62. A can do a work in 24 days, and B in 30 days. After B works for 10 days, A joins. How long to finish the remaining work?

- A) 12 days

B) $80/9$ days

C) 16 days

D) 18 days

Answer: B

Explanation: B's work in 10 days = $10/30 = 1/3$. Remaining work = $2/3$.
Combined rate = $1/24 + 1/30 = 9/120 = 3/40$. Time = $(2/3) \div (3/40) = 80/9$ days

63. If 10 workers can complete a task in 15 days, how many days will 12 workers take?

A) 12 days

B) 12.5 days

C) 13 days

D) 14 days

Answer: B

Explanation: Total work = $10 \times 15 = 150$ worker-days. For 12 workers, time = $150 \div 12 = 12.5$ days.

64. A can do a work in 12 days, and B is 50% less efficient. How long will they take together?

A) 8 days

B) 9 days

C) 10 days

D) 12 days

Answer: A

Explanation: B's rate = $0.5 \times 1/12 = 1/24$. Combined rate = $1/12 + 1/24 = 3/24 = 1/8$. Time = 8 days.

65. A pipe fills a tank in 12 hours, and a leak empties it in 18 hours. If both are open, what fraction is filled in 3 hours?

A) $1/12$

B) $1/4$

C) $1/3$

D) $1/2$

Answer: A

Explanation: Net rate = $\frac{1}{12} - \frac{1}{18} = \frac{1}{36}$. Work in 3 hours = $3 \times \frac{1}{36} = \frac{1}{12}$

66. A can do a work in 20 days, and B in 30 days. After A works for 8 days, how many days will B take to finish?

- A) 16 days
- B) 18 days
- C) 20 days
- D) 22 days

Answer: B

Explanation: A's work in 8 days = $\frac{8}{20} = \frac{2}{5}$. Remaining work = $\frac{3}{5}$. B's rate = $\frac{1}{30}$, so time = $(\frac{3}{5}) \div (\frac{1}{30}) = 18$ days.

67. If 8 workers can complete a job in 15 days, how many workers are needed for 10 days?

- A) 10
- B) 11
- C) 12
- D) 13

Answer: C

Explanation: Total work = $8 \times 15 = 120$ worker-days. Workers for 10 days = $120 \div 10 = 12$ workers.

68. A can do a work in 15 days, and B is 25% more efficient. How long will they take together?

- A) 6 days
- B) 7 days
- C) $\frac{20}{3}$ days
- D) 9 days

Answer: C

Explanation: B's rate = $1.25 \times \frac{1}{15} = \frac{5}{60} = \frac{1}{12}$. Combined rate = $\frac{1}{15} + \frac{1}{12} = \frac{9}{60} = \frac{3}{20}$. Time = $1 \div (\frac{3}{20}) = \frac{20}{3}$ days

69. A pipe fills a tank in 10 hours, and another in 12 hours. If opened alternately starting with the slower pipe, how long to fill?

- A) 10.8 hours
- B) 11 hours
- C) 11.2 hours
- D) 12 hours

Answer: B

Explanation: In 2 hours, work = $\frac{1}{12} + \frac{1}{10} = \frac{11}{60}$. In 10 hours (5 cycles), work = $5 \times \frac{11}{60} = \frac{55}{60}$. Remaining $\frac{5}{60}$ done by slower pipe in $\frac{5}{60} \div \frac{1}{12} = 1$ hour. Total = $10 + 1 = 11$ hours.

70. A can do a work in 18 days. After 9 days, B joins, and they finish in 6 more days. How long does B alone take?

- A) 18 days
- B) 20 days
- C) 36 days
- D) 30 days

Answer: C

Explanation: A's work in 9 days = $\frac{9}{18} = \frac{1}{2}$. Remaining work = $\frac{1}{2}$, done in 6 days. Combined rate = $(\frac{1}{2}) \div 6 = \frac{1}{12}$. B's rate = $\frac{1}{12} - \frac{1}{18} = \frac{1}{36}$. B's time = 36 days.

71. If 7 workers can complete a task in 21 days, how many days will 14 workers take?

- A) 10 days
- B) 10.5 days
- C) 11 days
- D) 12 days

Answer: B

Explanation: Total work = $7 \times 21 = 147$ worker-days. For 14 workers, time = $147 \div 14 = 10.5$ days.

72. A can do a work in 12 days, and B in 18 days. After A works for 3 days, what fraction of the work remains?

- A) $\frac{1}{2}$
- B) $\frac{2}{3}$
- C) $\frac{3}{4}$

D) $\frac{5}{6}$

Answer: C

Explanation: A's work in 3 days = $\frac{3}{12} = \frac{1}{4}$. Remaining work = $1 - \frac{1}{4} = \frac{3}{4}$.

73. A pipe fills a tank in 15 hours, and a leak empties it in 20 hours. If both are open, how long to fill the tank?

A) 18 hours

B) 20 hours

C) 24 hours

D) 60 hours

Answer: D

Explanation: Net rate = $\frac{1}{15} - \frac{1}{20} = \frac{1}{60}$. Time = $1 \div (\frac{1}{60}) = 60$ hours.

74. A can do a work in 10 days, and B in 15 days. After B works for 5 days, A joins. How long to finish the remaining work?

A) 4 days

B) 5 days

C) 6 days

D) 7 days

Answer: A

Explanation: B's work in 5 days = $\frac{5}{15} = \frac{1}{3}$. Remaining work = $\frac{2}{3}$. Combined rate = $\frac{1}{10} + \frac{1}{15} = \frac{1}{6}$. Time = $(\frac{2}{3}) \div (\frac{1}{6}) = 4$ days.

75. If 12 workers can complete a job in 8 days, how many workers are needed for 6 days?

A) 14

B) 15

C) 16

D) 18

Answer: C

Explanation: Total work = $12 \times 8 = 96$ worker-days. Workers for 6 days = $96 \div 6 = 16$ workers.

76. A can do a work in 20 days, and B is 40% more efficient. How long will they take together?

- A) $25/3$ days
- B) 8.57 days
- C) 9 days
- D) 10 days

Answer: A

Explanation: B's rate = $1.4 \times 1/20 = 7/100$. Combined rate = $1/20 + 7/100 = 3/25$. Time = $1 \div (3/25) = 25/3$ days

77. A pipe fills a tank in 12 hours, and another in 18 hours. If both are open for 5 hours, what fraction of the tank is filled?

- A) $5/12$
- B) $25/36$
- C) $2/3$
- D) $3/4$

Answer: B

Explanation: Combined rate = $1/12 + 1/18 = 5/36$. Work in 5 hours = $5 \times 5/36 = 25/36$

78. A can do a work in 16 days, and B in 24 days. After A works for 4 days, how many days will B take to finish?

- A) 16 days
- B) 18 days
- C) 20 days
- D) 22 days

Answer: C

Explanation: A's work in 4 days = $4/16 = 1/4$. Remaining work = $3/4$. B's rate = $1/24$, so time = $(3/4) \div (1/24) = 18$ days.

79. If 6 workers can complete a task in 24 days, how many days will 8 workers take?

- A) 16 days
- B) 18 days
- C) 20 days

D) 22 days

Answer: B

Explanation: Total work = $6 \times 24 = 144$ worker-days. For 8 workers, time = $144 \div 8 = 18$ days.

80. A can do a work in 12 days, and B in 18 days. If they work together for 3 days, what fraction of the work remains?

A) $1/2$

B) $7/12$

C) $3/4$

D) $5/6$

Answer: B

Explanation: Combined rate = $1/12 + 1/18 = 5/36$. Work in 3 days = $3 \times 5/36 = 5/12$. Remaining work = $1 - 5/12 = 7/12$

Section 3: High Difficulty (Questions 81–100)

81. A and B can do a work in 8 days, B and C in 12 days, and A and C in 16 days. How long will A, B, and C take together?

A) 6 days

B) 7 days

C) 8 days

D) 9 days

Answer: B

Explanation: Combined rates: $A+B = 1/8$, $B+C = 1/12$, $A+C = 1/16$. Add: $2(A+B+C) = 1/8 + 1/12 + 1/16 = 13/48$. $A+B+C = 13/96$. Time = $96/13$ days. Closest option is 7 days

82. A can do $1/3$ of a work in 5 days, and B can do $1/4$ in 6 days. How long will they take together?

A) 7.2 days

B) 8 days

C) 8.4 days

D) 9.23 days

Answer: D

Explanation: A's rate = $(1/3)/5 = 1/15$; B's rate = $(1/4)/6 = 1/24$.
Combined rate = $1/15 + 1/24 = 13/120$. Time = $1 \div (13/120) = 120/13 \approx 9.2$
3 days.

83. Two pipes A and B fill a tank in 12 and 15 hours. If opened alternately for 1 hour each, starting with A, how long to fill?

- A) 13 hours
- B) 13.2 hours
- C) 13.4 hours
- D) 13.6 hours

Answer: B

Explanation: In 2 hours, work = $1/12 + 1/15 = 9/60$. In 12 hours (6 cycles), work = $6 \times 9/60 = 54/60$. Remaining $6/60$ done by A in $6/60 \div 1/12 = 0.5$ hours. Total = $12 + 0.5 = 13.2$ hours.

84. A can do a work in 10 days, B in 15 days, and C in 20 days. How long will they take together?

- A) 4 days
- B) 5 days
- C) $60/13$ days
- D) 7 days

Answer: C

Explanation: Combined rate = $1/10 + 1/15 + 1/20 = 13/60$. Time = $1 \div (13/60) = 60/13$ days

85. A machine can do a job in 8 hours. After 3 hours, another machine, twice as fast, joins. How long to finish the remaining work?

- A) $5/3$ hours
- B) 2.5 hours
- C) 3 hours
- D) 3.5 hours

Answer: A

Explanation: First machine's rate = $1/8$; work in 3 hours = $3/8$. Remaining work = $5/8$. Second machine's rate = $2/8 = 1/4$. Combined rate = $1/8 + 1/4 = 3/8$. Time = $(5/8) \div (3/8) = 5/3$ hours

86. A can do a work in 12 days, B in 18 days, and C in 24 days. After A and B work for 3 days, C finishes. How long will C take?

- A) 12 days
- B) 14 days
- C) 16 days
- D) 18 days

Answer: B

Explanation: A+B rate = $\frac{1}{12} + \frac{1}{18} = \frac{5}{36}$. Work in 3 days = $3 \times \frac{5}{36} = \frac{5}{12}$. Remaining work = $\frac{7}{12}$. C's rate = $\frac{1}{24}$, so time = $(\frac{7}{12}) \div (\frac{1}{24}) = 14$ days.

87. A pipe fills a tank in 6 hours, and a leak empties it in 12 hours. If the tank is $\frac{1}{3}$ full, how long to fill with both open?

- A) 4 hours
- B) 5 hours
- C) 6 hours
- D) 8 hours

Answer: D

Explanation: Net rate = $\frac{1}{6} - \frac{1}{12} = \frac{1}{12}$. To fill $\frac{2}{3}$ tank, time = $(\frac{2}{3}) \div (\frac{1}{12}) = 8$ hours.

88. A and B can do a work in 10 days, B and C in 12 days, and A and C in 15 days. How long does C alone take?

- A) 20 days
- B) 24 days
- C) 30 days
- D) 40 days

Answer: D

Explanation: Combined rates: $A+B = \frac{1}{10}$, $B+C = \frac{1}{12}$, $A+C = \frac{1}{15}$. Add: $2(A+B+C) = \frac{1}{10} + \frac{1}{12} + \frac{1}{15} = \frac{15}{60} = \frac{1}{4}$. $A+B+C = \frac{1}{8}$. C's rate = $\frac{1}{8} - \frac{1}{10} = \frac{1}{40}$. C's time = 40 days.

89. A can do a work in 15 days, and B can do $\frac{1}{3}$ of it in 6 days. How long will they take together?

- A) 5 days
- B) 99/11 days
- C) 7 days
- D) 8 days

Answer: B

Explanation: A's rate = $1/15$; B's rate = $(1/3)/6 = 1/18$. Combined rate = $1/15 + 1/18 = 11/90$. Time = $1 \div (11/90) = 90/11$ days

90. Two pipes fill a tank in 8 and 12 hours. If opened alternately starting with the slower pipe, how long to fill?

- A) 9 hours
- B) 9.3 hours
- C) 9.6 hours
- D) 10 hours

Answer: D

Explanation: In 2 hours, work = $1/12 + 1/8 = 5/24$. In 8 hours (4 cycles), work = $4 \times 5/24 = 20/24 = 5/6$. Remaining $1/6$ done by slower pipe in $1/6 \div 1/12 = 2$ hours. Total = $8 + 2 = 10$ hours.

91. A can do a work in 20 days, B in 30 days, and C in 40 days. After A works for 5 days, B and C join. How long to finish?

- A) 10 days
- B) 11 days
- C) 90/13 days
- D) 13 days

Answer: C

Explanation: A's work in 5 days = $5/20 = 1/4$. Remaining work = $3/4$. A+B+C rate = $1/20 + 1/30 + 1/40 = 13/120$ units/day. Time taken to complete remaining work = $(3/4) \div (13/120) = 90/13$ days.

92. A machine can do a job in 10 hours. After 4 hours, another machine, 50% faster, joins. How long to finish the remaining work?

- A) 2.4 hours
- B) 3 hours
- C) 3.6 hours

D) 4 hours

Answer: A

Explanation: First machine's rate = $1/10$; work in 4 hours = $4/10 = 2/5$.

Remaining work = $3/5$. Second machine's rate = $1.5 \times 1/10 = 3/20$.

Combined rate = $1/10 + 3/20 = 5/20 = 1/4$. Time = $(3/5) \div (1/4) = 2.4$ hours.

93. A can do a work in 12 days, B in 18 days, and C in 24 days. If A and B work for 4 days, then C finishes, how long will C take?

A) 12 days

B) $32/3$ days

C) 16 days

D) 18 days

Answer: B

Explanation: A+B rate = $1/12 + 1/18 = 5/36$. Work in 4 days = $4 \times 5/36 = 5/9$. Remaining work = $4/9$. C's rate = $1/24$, so time = $(4/9) \div (1/24) = 32/3$ days

94. A pipe fills a tank in 9 hours, and a leak empties it in 12 hours. If the tank is $1/4$ full, how long to fill with both open?

A) 6 hours

B) 7 hours

C) 27 hours

D) 9 hours

Answer: C

Explanation: Net rate = $1/9 - 1/12 = 1/36$. To fill $3/4$ tank, time = $(3/4) \div (1/36) = 27$ hours

95. A and B can do a work in 10 days, B and C in 15 days, and A and C in 12 days. How long does A alone take?

A) 12 days

B) 15 days

C) 18 days

D) 24 days

Answer: D

Explanation: Combined rates: $A+B = 1/10$, $B+C = 1/15$, $A+C = 1/12$. Add:
 $2(A+B+C) = 1/10 + 1/15 + 1/12 = 13/60$. $A+B+C = 13/120$. A's rate =
 $13/120 - 1/15 = 5/120 = 1/24$. A's time = 24 days.

96. A can do $1/4$ of a work in 5 days, and B can do $1/3$ in 6 days. How long will they take together?

- A) 9.4 days
- B) 7 days
- C) 7.5 days
- D) 8 days

Answer: A

Explanation: A's rate = $(1/4)/5 = 1/20$; B's rate = $(1/3)/6 = 1/18$.
Combined rate = $1/20 + 1/18 = 19/180$. Time = $1 \div (19/180) = 180/19 \approx 9.47$ days.

97. Two pipes fill a tank in 10 and 12 hours. If opened alternately starting with the faster pipe, how long to fill?

- A) 10.8 hours
- B) 11 hours
- C) 11.2 hours
- D) 11.4 hours

Answer: B

Explanation: In 2 hours, work = $1/10 + 1/12 = 11/60$. In 10 hours (5 cycles), work = $5 \times 11/60 = 55/60$. Remaining $5/60$ done by faster pipe in $5/60 \div 1/10 = 0.5$ hours. Total = $10 + 0.5 = 11$ hours.

98. A can do a work in 15 days, B in 20 days, and C in 30 days. After A works for 5 days, B and C join. How long to finish?

- A) 6 days
- B) $40/9$ days
- C) 8 days
- D) 9 days

Answer: B

Explanation: A's work in 5 days = $5/15 = 1/3$. Remaining work = $2/3$. A + B+C rate = $1/15 + 1/20 + 1/30 = 3/20$. Time = $(2/3) \div (3/20) = 40/9$ days

99. A machine can do a job in 12 hours. After 4 hours, another machine, twice as fast, joins. How long to finish the remaining work?

- A) 2 hours
- B) 2.5 hours
- C) 3 hours
- D) 3.5 hours

Answer: B

Explanation: First machine's rate = $1/12$; work in 4 hours = $4/12 = 1/3$. Remaining work = $2/3$. Second machine's rate = $2/12 = 1/6$. Combined rate = $1/12 + 1/6 = 3/12 = 1/4$. Time = $(2/3) \div (1/4) = 8/3 \approx 2.5$ hours. (closest approximation from the options given)

100. A and B can do a work in 12 days, B and C in 15 days, and A and C in 20 days. How long does B alone take?

- A) 20 days
- B) 24 days
- C) 30 days
- D) 60 days

Answer: C

Explanation: Combined rates: $A+B = 1/12$, $B+C = 1/15$, $A+C = 1/20$. Add: $2(A+B+C) = 1/12 + 1/15 + 1/20 = 12/60 = 1/5$. $A+B+C = 1/10$. B's rate = $1/10 - 1/20 = 1/20$. B's time = 20 days.

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