

# QUANTITATIVE ABILITY HANDOUT

(Time and Distance)

Ref: QAHO2101407

$$S_{\text{avg}} = \frac{S_1 + S_2}{2}$$

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$$\text{Boats} = x$$

$$\text{Stream} = y$$

$$S_{\text{op}} = x - y$$

$$S_{\text{down}} = x + y$$

Directions for questions 1 to 25: Select the correct alternative from the given choices.

- If a man can cover 10 metres in one second, how many kilometres can he cover in 3 hours 45 minutes by travelling at the same rate?  
(1) 168 (2) 135 (3) 150 (4) 156
- A person covered 90 km travelling equal distances at 10 km/ph, 20 km/ph, 30 km/ph. What is the total time taken to cover the distance?  
(1) 5.5 hours (2) 4.5 hours  
(3)  $3\frac{1}{3}$  hours (4)  $2\frac{2}{3}$  hours
- Prabhakar travelled for 1 hour 24 minutes. He covered the first half of the distance at 30 km/ph and remaining distance at 75 km/ph. What is the total distance he travelled?  
(1) 80 km (2) 90 km (3) 70 km (4) 60 km
- A person reaches his office 10 mins late travelling at 40 km/ph. If he travels at 50 km/ph, he is early by 10 minutes. What is the distance he has to travel to reach his office?  
(1)  $56\frac{1}{3}$  km (2)  $66\frac{2}{3}$  km  
(3) 59 km (4) 63 km
- While covering a certain distance if a person increases his speed from 100 km/ph to 120 km/ph he saves 10 minutes. What is the distance covered by him?  
(1) 120 km (2) 100 km (3) 140 km (4) 80 km
- A person covered the distance from P to Q at a speed of 40 km/ph. He covered three-fifth of the distance in two-third of the total time. At what speed should he travel to complete the remaining part of the journey in the remaining time?  
(1) 36 km/ph (2) 44 km/ph (3) 40 km/ph (4) 48 km/ph
- A person travelled from A to B at 80 km/ph and returned back at 120 km/ph. What is his average speed for the entire journey?  
(1) 96 km/ph (2) 108 km/ph (3) 84 km/ph (4) 100 km/ph
- Three cars have the ratio of their speeds as 5 : 6 : 7. Find the ratio of the times they would take to travel a certain distance.  
(1) 7 : 6 : 5 (2) 30 : 35 : 42  
(3) 5 : 6 : 7 (4) 42 : 35 : 30
- Had a person travelled 3 km/ph faster he would have taken 2 hours less to cover a certain distance. Had he travelled 4 km/ph slower he would have taken 5 hours more to cover the same distance. Find the distance.  
(1) 180 km (2) 120 km  
(3) 140 km (4) 160 km
- P and Q are 60 km apart. They start simultaneously towards each other at speeds of 10 km/ph and 20 km/ph respectively. In how many hours will they meet?  
(1) 5 (2) 2 (3) 4 (4) 6
- A car completed a certain trip at an average speed of 40 km/hr after stopping at certain places. Had it not stopped anywhere, its average speed would have been 50 km/hr. Find the time that the car stopped in each hour on an average (in minutes).  
(1) 10 (2) 12 (3) 15 (4) 18
- A train crosses a platform of length 100 m in 18 seconds and a 175 m long platform in 27 seconds. What is the speed of the train?  
(1) 26 km/ph (2) 30 km/ph  
(3) 28 km/ph (4) 32 km/ph
- A train, 280 m long, is running at 27 km/ph. What is the time taken by the train to cross a person standing on a 220 m long platform?  
(1)  $37\frac{2}{3}$  sec (2)  $38\frac{1}{3}$  sec  
(3)  $38\frac{2}{3}$  sec (4)  $37\frac{1}{3}$  sec
- A train, 225 m long, crossed a 175 m long platform in 10 seconds. Find the speed of the train.  
(1) 35 m/s (2) 40 m/s (3) 38 m/s (4) 33 m/s
- A train, 180 m long, crossed a 120 m long platform in 20 seconds, and another train travelling at the same speed crossed an electric pole in 10 seconds. In how much time will they cross each other when they are travelling in the opposite direction?  
(1) 11 sec (2) 13 sec (3) 12 sec (4) 14 sec
- A train, 245 m long, running at 60 km/ph crosses another train moving in the same direction at 38 km/ph in 90 seconds. What is the length of the second train?  
(1) 305 m (2) 335 m (3) 315 m (4) 325 m
- A man can row 30 km downstream in 3 hours 45 minutes, and 11 km upstream in 2 hours 12 minutes. What is the speed of the man in still water and the speed of stream (in km/ph)?  
(1) 6 and 2 (2) 6.8 and 1.8  
(3) 6.5 and 1.5 (4) 7 and 3
- A man rows 22 km upstream in 4 hours and 45 km downstream in 6 hours. In 10 hours, how much more distance can he row downstream than the distance he can row upstream?  
(1) 24 km (2) 22 km (3) 18 km (4) 20 km



19. In a 500 m race, A beats B by 20 m and C by 30 m. In a 2880 m race, by how many metres does B beat C?

- (1) 50 (2) 60 (3) 55 (4) 45

20. In an 800 m race A beats B by 160 m or 20 seconds. Find A's speed in metres per second.

- (1) 8 (2) 12.5 (3) 15 (4) 10

21. A train leaves station P at 6.00 am and reaches station Q at 3.00 pm. Another train leaves station Q at 7.00 am and reaches station P at 4.00 pm. When will the two trains meet?

- (1) 10:30 am (2) 11:30 am  
(3) 11:00 am (4) 10:00 am

22. Two persons start running simultaneously around a circular track of length 300 m from the same point at speeds of 15 km/hr and 25 km/hr. When will they meet for the first time anywhere on the track if they are moving in the opposite direction?

- (1) 21 sec (2) 24 sec  
(3) 25 sec (4) 27 sec

23. An aeroplane started towards airport Q from airport P at 7 a.m. local time. Its total travel distance was 1600 km. The longitudes of P and Q are  $60^\circ$  W and  $45^\circ$  E respectively and they are on the same latitude. It landed at Q at 4 p.m. local time same day. Find its average speed (in km/ph).

- (1) 1000 (2) 800 (3) 1500 (4) 750

24. An escalator was moving up. It had 120 steps. Anil took 24 seconds to walk up on it. If his speed doubled and that of the escalator tripled, he would have taken only ten seconds to walk up on it. Find the time he would take to return back on it (in seconds)?

- (1) 60 (2) 90 (3) 120 (4) 30

25. A and B are two cities. Every hour a bus starts towards B from A from morning 6:00 a.m. onwards. Every half an hour a bus starts from B towards A from morning 6:00 am onwards. Each bus takes 4 hours to travel from one city to the other. If a bus starts at 10:00 am from A, how many buses would it meet until it reaches city B excluding the buses it meets at A and B?

- (1) 12 (2) 15 (3) 18 (4) 9

$$t = \frac{d}{s} = \frac{800}{\frac{800}{1.20}} = 840$$

$$S_A = x, S_B =$$



## QUANTITATIVE ABILITY HANDOUT

(Time & Work)

Ref: QAHO2101406

Directions for questions 1 to 25: Select the correct alternative from the given choices.

1. 2 men can produce 2000 bolts in 2 days working 2 hours a day. In how many days can 1 man produce 1000 bolts working 1 hour per day?  
(1) 4 (2) 2  
(3) 1 (4) 3
2. A and B can do a piece of work in 10 days. B alone can do the work in 15 days. In how many days can A do the work?  
(1) 25 (2) 30  
(3) 28 (4) 33
3. A and B can do a piece of work in 15 and 12 days respectively. A started the work and worked for 5 days and left. B can do the remaining work in  
(1) 6 days (2) 8 days  
(3) 9 days (4) 7 days
4. 10 men or 6 women can do a piece of work in 20 days. In what time can 3 men and 3 women do the work?  
(1) 12.5 days (2) 13.5 days  
(3) 12 days (4) 25 days
5. A is twice as efficient as B. Working together A and B can do a piece of work in 36 days. In how many days can A finish the work?  
(1) 66 (2) 54  
(3) 60 (4) 51
6. A can do a piece of work in 10 days and B can do it in 20 days. They work on alternate days starting with A. Then  
(1) A finishes the job on the 13<sup>th</sup> day  
(2) B finishes the job on the 12<sup>th</sup> day  
(3) A finishes the job on the 15<sup>th</sup> day  
(4) B finishes the job on the 14<sup>th</sup> day
7. 5 men can do a piece of work in 10 days and 6 women can do the same work in 15 days. In how many days can 2 men and 3 women together do the work?  
(1)  $12\frac{5}{11}$  (2)  $13\frac{7}{11}$   
(3)  $13\frac{2}{11}$  (4)  $12\frac{9}{11}$
8. One man, one woman and one child can do a piece of work in 10 days. One man can do the work in 30 days and one woman can do it in 20 days. In how many days can one child do the work?  
(1) 50 (2) 65  
(3) 55 (4) 60
9. A, B and C can do a piece of work in 30, 15 and 20 days respectively. They all together started the work. A leaves 4 days before the completion of the work and B leaves 1 day before the completion of the work. In how many days will the total work be completed?  
(1) 9 (2) 10 (3) 11 (4) 8
10. A, B and C can do a piece of work in 10, 15 and 20 days respectively. A started the work and worked for 2 days and left, then B completed 25% of the remaining work and left, C completed the remaining work. How many days did C take to complete the remaining work?  
(1) 10 (2) 16  
(3) 14 (4) 12
11. A, B and C can do a piece of work in 12 days, 18 days and 36 days respectively. Working together, they completed the work and earned ₹576. What is B's share?  
(1) ₹168 (2) ₹176  
(3) ₹192 (4) ₹184
12. 60 men can do a piece of work in 30 days. After every 10 days, 10 men leave. In how many days will the work be completed?  
(1) 45 (2) 40  
(3) 50 (4) 55
13. P and Q can do a piece of work in 18 and 30 days respectively. P worked for 2 days then Q joined him and they completed the work. What is the share of Q, out of total earnings for the work of ₹2,862?  
(1) ₹844 (2) ₹994  
(3) ₹884 (4) ₹954
14. A, B and C can do a piece of work in 10, 20 and 30 days respectively. A worked on the first day, B on the second day, C on the third day and then A again and so on. On which day was the work completed?  
(1) 16 (2) 15 (3) 17 (4) 14
15. In a hostel of 1200 men the provisions were sufficient for 21 days. But after 14 days, some men went on a holiday and hence the provisions lasted a day more than the original number of days. How many men left the hostel?  
(1) 150 (2) 200  
(3) 250 (4) 300
16. 30 men can make 120 articles in 8 days working 10 hours/day. If 10 men leave the work after 4 days, then how many hours per day should the rest of the men work to complete the job as per the schedule?  
(1) 12 (2) 18  
(3) 15 (4) 24



17. Two persons A and B can do a piece of work in 30 and 40 days respectively. With the help of C and D, they complete a work in 10 days. They received an amount of ₹1,800 for the work. Find the share of D, if his capacity to do the work is half of that of C.  
 (1) ₹250 (2) ₹500  
 (3) ₹750 (4) None of these
18. Pipe A can fill a cistern in 12 hours. Pipe B can empty the full cistern in 15 hours. If both the pipes are opened simultaneously, in how many hours is the empty cistern completely filled?  
 (1) 60 (2) 30 (3) 40 (4) 50
19. Two taps A and B can fill a tank in 10 minutes and 12 minutes respectively and tap C can empty the tank in 15 minutes. Two minutes after tap A is opened, tap C is also opened and after 3 more minutes tap B is also opened. In how many minutes is the tank filled?  
 (1) 11 (2) 10 (3) 8 (4) 15
20. Two taps can normally fill a cylindrical tank in 16 hours and 48 hours. But a leak which can empty the tank in 24 hours is present at  $(\frac{3}{4})^{th}$  of the tank's height from the base. Find the time taken to fill the tank if the taps are opened simultaneously (in hours).  
 (1) 12 (2) 15 (3) 18 (4) 21
21. Pipe A can fill a 1200 litres capacity tank in 10 hours. Pipe B can fill at 80 litres per hour. If both pipes are opened, then in how many hours will the tank become full?  
 (1) 5 (2)  $6\frac{1}{2}$  (3)  $5\frac{1}{2}$  (4) 6
22. P, Q, R and S are four taps which can fill a tank in 36, 18, 12 and 6 hours respectively. If P is opened at 10:00 a.m., Q at 10:30 a.m., R at 11:00 a.m. and S at 11:30 a.m. At what time is the tank filled?  
 (1) 1:35 p.m. (2) 2:05 p.m.  
 (3) 2:25 p.m. (4) 2:45 p.m.
23. P and Q are filling pipes which can fill a tank in 15 and 20 minutes respectively. R is an emptying pipe which can empty the full tank in 30 minutes. The three pipes are operated continuously one after the other in the order of P, Q and R, each being kept opened for 2 minutes until the tank is filled. After how much time will the tank be full?  
 (1) 30 minutes (2)  $32\frac{2}{3}$  minutes  
 (3) 36 minutes (4) 34 minutes
24. Praveen, Shiva and Sunny, each working alone, take 20, 10 and 5 days respectively to make 2000 hats, each. If the defects in their production are 10%, 20% and 40% respectively, approximately, how many days will it take them working together to make 9800 non-defective hats?  
 (1) 22 (2) 20  
 (3) 18 (4) 24
25. Pipes X and Y can fill a tank in 12 hours. Pipes X and Z can fill it in 15 hours. Pipes Y and Z can fill it in 20 hours. Which of the following can be concluded?  
 (1) X is the most efficient among the three pipes.  
 (2) Z is the least efficient among the three pipes.  
 (3) Both (1) and (2)  
 (4) Neither (1) nor (2)