Problems on trains

1. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?

   (A) 120 metres

   (B) 180 metres

   (C) 324 metres

   (D) 150 metres ✓

2. A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. The speed of the train is:

   (A) 45 km/hr

   (B) 50 km/hr ✓

   (C) 54 km/hr

   (D) 55 km/hr

3. The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is:

   (A) 200 m

   (B) 225 m

   (C) 245 m ✓

   (D) 250 m

4. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is:

   (A) 1 : 3

   (B) 3 : 2 ✓

   (C) 3 : 4

   (D) None of these

5. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?

   (A) 120 m

   (B) 240 m ✓

   (C) 300 m

   (D) None of these

6. A train 240 m long passes a pole in 24 seconds. How long will it take to pass a platform 650 m long?

(A) 65 sec

(B) 89 sec ✓

(C) 100 sec

(D) 150 sec

7. Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr. The faster train passes the slower train in 36 seconds. The length of each train is:

(A) 50 m ✓

(B) 72 m

(C) 80 m

(D) 82 m

8. A train 360 m long is running at a speed of 45 km/hr. In what time will it pass a bridge 140 m long?

(A) 40 sec ✓

(B) 42 sec

(C) 45 sec

(D) 48 sec

9. Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is:

(A) 36

(B) 45

(C) 48 ✓

(D) 49

10. A jogger running at 9 kmph alongside a railway track in 240 metres ahead of the engine of a 120 metres long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?

(A) 3.6 sec

(B) 18 sec

(C) 36 sec ✓

(D) 72 sec

Time and Work

1. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is :

   (A) $\frac{1}{4}$

   (B) $\frac{1}{10}$

   (C) $\frac{7}{15}$

   (D) $\frac{8}{15}$ ✓

---

2. A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in:

   (A) $9\frac{1}{5}$ days

   (B) $9\frac{2}{5}$ days

   (C) $9\frac{3}{5}$ days ✓

   (D) 10

---

3. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

   (A) 12 days

   (B) 15 days ✓

   (C) 16 days

   (D) 18 days

---

4. A is thrice as good as workman as B and therefore is able to finish a job in 60 days less than B. Working together, they can do it in:

   (A) 20 days

   (B) $22\frac{1}{2}$ days ✓

   (C) 25 days

   (D) 30 days

---

5. A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?

   (A) Rs. 375

   (B) Rs. 400 ✓

   (C) Rs. 600

   (D) Rs. 800

Simple Intrest

1. A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is:

   (A) Rs. 650

   (B) Rs. 690

   (C) Rs. 698 ✓

   (D) Rs. 700

2. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?

   (A) Rs. 6400 ✓

   (B) Rs. 6500

   (C) Rs. 7200

   (D) Rs. 7500

   (E) None of these

3. A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 p.c.p.a. in 5 years. What is the sum?

   (A) Rs. 4462.50

   (B) Rs. 8032.50

   (C) Rs. 8900

   (D) Rs. 8925 ✓

   (E) None of these

4. How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

   (A) 3.5 years

   (B) 4 years ✓

   (C) 4.5 years

   (D) 5 years

5. Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?

   (A) 3.6

   (B) 6 ✓

   (C) 18

   (D) Cannot be determined

   (E) None of these

Percentages

1. A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?

   (A) 45%

   (B) $45\frac{5}{11}\%$ ✓

   (C) $54\frac{6}{11}\%$

   (D) 55%

---

2. Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. The marks obtained by them are:

   (A) 39, 30

   (B) 41, 32

   (C) 42, 33 ✓

   (D) 43, 34

---

3. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:

   (A) 588 apples

   (B) 600 apples

   (C) 672 apples

   (D) 700 apples ✓

---

4. What percentage of numbers from 1 to 70 have 1 or 9 in the unit's digit?

   (A) 1

   (B) 14

   (C) 20 ✓

   (D) 21

---

5. If A = x % of y and B = y % of x, then which of the following is true?

   (A) A is smaller than B.

   (B) A is greater than B

   (C) Relationship between A and B cannot be determined.

   (D) If x is smaller than y, then A is greater than B.

   (E) None of these ✓

Compound interest

1. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:

   (A) Rs. 120

   (B) Rs. 121 ✓

   (C) Rs. 122

   (D) Rs. 123

2. The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Re. 1. The sum (in Rs.) is:

   (A) 625 ✓

   (B) 630

   (C) 640

   (D) 650

3. There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest of Rs. 12,000 after 3 years at the same rate?

   (A) Rs. 2160

   (B) Rs. 3120

   (C) Rs. 3972 ✓

   (D) Rs. 6240

   (E) None of these

4. What is the difference between the compound interests on Rs. 5000 for $1\frac{1}{2}$ years at 4% per annum compounded yearly and half-yearly?

   (A) Rs. 2.04 ✓

   (B) Rs. 3.06

   (C) Rs. 4.80

   (D) Rs. 8.30

5. The compound interest on Rs. 30,000 at 7% per annum is Rs. 4347. The period (in years) is:

   (A) 2 ✓

   (B) $2\frac{1}{2}$

   (C) 3

   (D) 4

Boats and Streams

1. A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.

   (A) 2 hours

   (B) 3 hours

   (C) 4 hours ✓

   (D) 5 hours

---

2. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:

   (A) 8.5 km/hr

   (B) 9 km/hr

   (C) 10 km/hr ✓

   (D) 12.5 km/hr

---

3. A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?

   (A) 2 : 1

   (B) 3 : 2

   (C) 8 : 3 ✓

   (D) Cannot be determined

   (E) None of these

---

4. A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is:

   (A) 4

   (B) 5 ✓

   (C) 6

   (D) 10

---

5. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:

   (A) 3 km/hr

   (B) 5 km/hr

   (C) 8 km/hr ✓

   (D) 9 km/hr

Clocks

1. An accurate clock shows 8 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

   (A) 144°

   (B) 150°

   (C) 168°

   (D) 180° ✓

2. The reflex angle between the hands of a clock at 10.25 is:

   (A) 180°

   (B) $192\frac{1}{2}°$

   (C) 195°

   (D) $197\frac{1}{2}°$ ✓

3. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

   (A) 145°

   (B) 150°

   (C) 155° ✓

   (D) 160°

4. A watch which gains 5 seconds in 3 minutes was set right at 7 a.m. In the afternoon of the same day, when the watch indicated quarter past 4 o'clock, the true time is:

   (A) $59\frac{7}{12}$ min. past 3

   (B) 4 p.m. ✓

   (C) $58\frac{7}{11}$ min. past 3

   (D) $2\frac{3}{11}$ min. past 4

5. How much does a watch lose per day, if its hands coincide every 64 minutes?

   (A) $32\frac{8}{11}$ min. ✓

   (B) $36\frac{5}{11}$ min.

   (C) 90 min.

   (D) 96 min.

Ratio and Proportion

1. A and B together have Rs. 1210. If $\frac{4}{15}$ of A's amount is equal to $\frac{2}{5}$ of B's amount, how much amount does B have?

   (A) Rs. 460

   (B) Rs. 484 ✓

   (C) Rs. 550

   (D) Rs. 664

---

2. Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is:

   (A) 2 : 5

   (B) 3 : 5

   (C) 4 : 5 ✓

   (D) 6 : 7

---

3. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1000 more than D, what is B's share?

   (A) Rs. 500

   (B) Rs. 1500

   (C) Rs. 2000 ✓

   (D) None of these

---

4. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

   (A) 2 : 3 : 4 ✓

   (B) 6 : 7 : 8

   (C) 6 : 8 : 9

   (D) None of these

---

5. In a mixture 60 litres, the ratio of milk and water 2 : 1. If this ratio is to be 1 : 2, then the quantity of water to be further added is:

   (A) 20 litres

   (B) 30 litres

   (C) 40 litres

   (D) 60 litres ✓

Calendars

1. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?

   (A) Sunday

   (B) Saturday

   (C) Friday ✓

   (D) Wednesday

2. What was the day of the week on 28th May, 2006?

   (A) Thursday

   (B) Friday

   (C) Saturday

   (D) Sunday ✓

3. What was the day of the week on 17th June, 1998?

   (A) Monday

   (B) Tuesday

   (C) Wednesday ✓

   (D) Thursday

4. What will be the day of the week 15th August, 2010?

   (A) Sunday ✓

   (B) Monday

   (C) Tuesday

   (D) Friday

5. Today is Monday. After 61 days, it will be:

   (A) Wednesday

   (B) Saturday ✓

   (C) Tuesday

   (D) Thursday