1. 24 men can complete a piece of work in 16 days. 16 women can complete the same work in 12 days. 8 men and 8 women started working on the task. After 6 days, x men were added to the group such that the work was finished in 4 more days. Find the value of x.

(A) 24
(B) 32
(C) 36
(D) 40
(E) 48

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2. There are 3 chess players in the 1st year, 4 chess players in the 2nd year, and 5 chess players in the 3rd year of college. What is the probability of selecting a team of 4 chess players if at least one player is from the 1st year?

(A) 41/55
(B) 27/110
(C) 19/66
(D) 37/60
(E) 82/99

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3. A number $x = 3.1212121212\ldots$. By what least number should we multiply x, so that we obtain an integer?

(A) 3
(B) 9
(C) 30
(D) 33
(E) 99

---

4. If $x^2 + y^2 + z^2 = 3$, which of the following cannot be the value of $xy + yz + zx$?

(A) -2
(B) -1
(C) 0
(D) 1
(E) 2

---

5. A company manufactures only three types of vehicles: bikes, cars, and trucks. In 2021, the number of bikes manufactured was 40% of the number of bikes

manufactured in 2022. The number of trucks manufactured in 2022 was 25% more than in 2021. In 2022, the number of trucks manufactured was the average of the number of bikes and cars manufactured that year. The company manufactured 10% fewer cars in 2021 as compared to 2022. The total number of vehicles produced in 2022 was 120,000. In 2021, the ratio of bikes and trucks manufactured was 1:4. How many cars were produced in 2022?

(A) 50000
(B) 54000
(C) 55000
(D) 60000
(E) 63000

---

6. Some students are sitting in a row. Amrit is at 19^{th} position from the left. Rahul is 8^{th} to the left of Amrit and 6^{th} to the left of Dhaval. If Dhaval is 12^{th} from the right, how many students are there in the row?

(A) 28
(B) 29
(C) 30
(D) 31
(E) 32

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7. A, B, C, D, E, and F form three couples that are traveling on a train. Their ages are 24, 28, 29, 32, 34, and 35 years, not necessarily in the same order. Two of them are assigned upper berths, while one each is assigned a lower, a middle, a side lower, and a side upper berth.

- The sum of the ages of the females is 14 years less than the sum of the ages of the males.
- E is the youngest of the males and is assigned one of the side berths.
- None of the females is assigned an upper berth.
- The 32-year-old is assigned the middle berth.
- D is 28 years old and is assigned the middle lower berth.
- Neither A nor C is assigned an upper berth.
- F is older than B.

Which of the following statements is definitely true?

(A) C is older than three other people.
(B) A is assigned a lower berth.
(C) The two oldest persons are assigned upper berths.

(D) A is older than B.
(E) One of the males is assigned a lower berth.

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9. Choose the pair that best expresses a similar relationship to the one expressed in the given pair:
enchant : captivate :: urge : ?

(A) confuse
(B) avert
(C) disagree
(D) enforce
(E) encourage

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10. Choose the correct sequence of prepositions that completes the 3 given sentences.
When she heard the final verdict, her face took ___ a grim expression. I was taken ___ by the sudden announcement that the meeting was canceled. The students were taken ___ with the idea of organizing a charity event for the upcoming holiday season.

(A) aback
(B) up
(C) on
(D) over
(E) after
(F) out

(A) FAB
(B) CED
(C) BFA
(D) CAB
(E) BDE

---

11. In the given question, the sentence has four underlined words or phrases. Identify the one underlined word or phrase that must be changed in order to make the sentence correct. Mark E for no error.
The cat, with its soft paws and silent steps, crept quiet through the moonlit garden, its eyes fixed on a tiny mouse scurrying across the dewy grass.

(A) with its soft
(B) crept quiet

(C) its eyes fixed
(D) scurrying across
(E) No error

---

12. In the given question, the sentence has four underlined words or phrases. Identify the one underlined word or phrase that must be changed in order to make the sentence correct. Mark E for no error.
The team, on <u>their</u> expedition to the remote and unforgiving wilderness, <u>faced countless</u> challenges, from treacherous <u>terrain to unpredictable</u> weather.

(A) their expedition
(B) the remote
(C) faced countless
(D) terrain to unpredictable
(E) No error

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