Practice Challenge - Objective

Subject: Mathematics

Topic : Arithmetic Progressions
Exam Prep 1 Class: X

1. Which of the following sequences form an AP?

(i) 2, 4, 8, 16……..

(ii) 2, 3, 5, 7, 11…….

(iii) -1, -1.25, -1.5, -1.75……

(iv) 1, -1, -3, -5……

A. (i) and (iv)

B. (ii) and (iv)

C. (iii) and (iv)

D. (i),(iii) and (iv)

2. A player who was playing video game was given 20 coins to begin with the game. To go to the next level, he needs to spend 4 coins and if he succeeds the particular level, he earns 6 coins. Find the number of coins he collects after clearing each level (assuming he clears every level).

A. 20, 25, 30, 35, 36……

B. 20, 22, 24, 26, 28……

C. 20, 24, 28, 30, 34……

D. 20, 26, 32, 38, 44……

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3. Find the 20^{th} term of the AP 2, 5, 8, 11, 14 ,...

   A. 57

   B. 58

   C. 59

   D. 60

4. An arithmetic sequence has 6^{th} term as 52 and 15^{th} term as 142. Find a & d .

   A. 2, 10

   B. 10, 2

   C. 2, 20

   D. 20, 2

5. Does the sequence of odd numbers form an AP?

   A. Yes, with a common difference of 1.

   B. No

   C. Yes, with a common difference of 2.

   D. Yes, with a common difference of -1.

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6. A twenty storied building was observed from outside, each floor has a kite shaped figure which gets on magnifying as observed from the 1^{st} to 20^{th} floor. The area of first five kites on each floor was calculated and they were found to develop a pattern. These five areas are $10m^2$, $15m^2$, $20m^2$, $25m^2$, $30m^2$ and so on. The area of the kite on the top floor is ____.

   A. $100m^2$

   B. $105m^2$

   C. $110m^2$

   D. $200m^2$

7. If the first term of an AP is -8 and the common difference is 4, then the sum of the first ten terms is

   A. 92

   B. 96

   C. 100

   D. 104

8. The sides of a right triangle are in an AP. The area and the perimeter of the triangle are numerically equal. Find its perimeter.

   A. 24 units

   B. 34 units

   C. 44 units

   D. 66 units

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9. The sum of `n' terms of a finite AP is $\frac{13}{2}$ times the sum of its first and last terms. Which term would be the middle term in this AP?

   A. 3rd term

   B. 5th term

   C. 7th term

   D. 9th term

10. If 8 times the 8^{th} term of an AP is equal to 15 times the 15^{th} term of the AP, then the 23^{rd} term of the AP is ___.

   A. 144

   B. 1

   C. 0

   D. 8