1. What is the area of the pentagon shown?

(a) \(\frac{1}{2}b(a+c)\text{sq.unites}\)  (b) \(\frac{1}{2}d(a+b)\text{sq.units}\)  (c) \(\frac{1}{2}a(b+c)\text{sq.units}\)  (d) \(\frac{1}{2}c(a+d)\text{sq.units}\)

2. If \(2A99561 = [3(523 + A)]^2\), then find \(A = ?\)
   (a) 5  (b) 7  (c) 4  (d) 1

3. Simplify: \(\sqrt{30} + 2\times\sqrt{20-18} + \sqrt{68-4}\) of \(\sqrt{125}\)
   (a) 28  (b) 46.7  (c) 1  (d) 48

4. The dimensions of a piece of iron in the shape of a cuboid are 270 cm × 100 cm × 64 cm. If it is melted and recast into a cube, then the surface area of the cube will be?
   (a) 14400 sq. cm  (b) 44200 sq. cm  (c) 57600 sq. cm  (d) 86400 sq. cm

5. A bank offers 5% compound interest calculated on half yearly basis. A customer deposits Rs. 1600 each on 1\(^{st}\) of January and 1\(^{st}\) of July of a year. At the end of the year, the amount he would have gained by way of interest is
   (a) Rs. 21  (b) Rs. 122  (c) Rs. 123  (d) Rs. 120

6. A book is 2 1/2 cm, thick. The thickness of each cover page is \(\frac{3}{32}\) cm and of each leaf is \(\frac{1}{160}\) cm. The number of leaves in the book is?
   (a) 370  (b) 400  (c) 275  (d) 300
7. The shaded region in the given figure is

(a) \(A \cap (B \cup C)\)  
(b) \(A \cup (B \cap C)\)  
(c) \(A \cap (B - C)\)  
(d) \(A - (B \cup C)\)

8. In the given figure O is the centre of the circle. If tangent PQ = 12 cm and BQ = 8 cm, then chord AB =?

(a) 10 cm  
(b) \(4\sqrt{5}\) cm  
(c) 4 cm  
(d) 18 cm

9. The volumes of two spheres are in the ratio of 8 : 27, then the ratio of their surface area is

(a) 2 : 3  
(b) 4 : 9  
(c) 1 : 3  
(d) 3 : 2

10. XY is drawn parallel to the base BC of a triangle ABC cutting AB at X and AC at Y. If AB = 5 BX and YC = 3 cm, then AY will be equal to

(a) 8 cm  
(b) 15 cm  
(c) 10 cm  
(d) 12 cm

11. The perimeter of a triangular field is 144 m ad the ratio of the sides is 3 : 4 : 5. Find the area of the field

(a) 432 sq.m  
(b) 636 sq.m  
(c) 512 sq.m  
(d) 864 sq.m

12. What is the value of \(\frac{(0.347)^3 + (0.9653)^3}{(0.347)^2 - (0.347)(0.9653) + (0.9653)^2}\)

(a) 0.1  
(b) 0.2  
(c) 0.3  
(d) None of these

13. The four boxes contain unknown numbers, \(\square\quad \square\quad \square\quad \square\). The average of the first two numbers is 4 and the average of the first three numbers is 9. The average of all our numbers is 15. If one of the four numbers is 2, then find the average of the last two.

(a) 26  
(b) 33  
(c) 6  
(d) 17

14. A cylindrical vessel 60 cm in diameter is partially filled with water. A sphere 30 cm in diameter is dropped into it. Find the increase in the level of water in the vessel.

(a) 4 cm  
(b) 2 cm  
(c) 5 cm  
(d) 3 cm

15. Find the solution of \(\sqrt{2x + 9} + x = 13\)

(a) \{13, – 9\}  
(b) \{9, – 13\}  
(c) \{8\}  
(d) \{13/2, – 9\}
### Answer Key

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (a)</td>
<td>2. (c)</td>
<td>3. (d)</td>
<td>4. (d)</td>
<td>5. (a)</td>
<td>6. (a)</td>
<td>7. (d)</td>
<td>8. (a)</td>
<td>9. (b)</td>
<td>10. (d)</td>
</tr>
<tr>
<td>11. (d)</td>
<td>12. (d)</td>
<td>13. (a)</td>
<td>14. (c)</td>
<td>15. (c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>