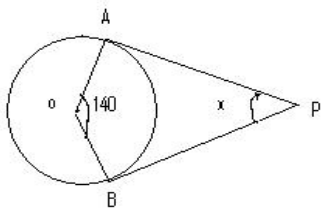1. If the equation $x^2 - ax + 1 = 0$ has no real roots, then
   (A) $a > 2$
   (B) $a < -2$
   (C) $-3 < a < 3$
   (D) $-2 < a < 2$

2. If 8 times the eighth term of an A.P. is equal to 7 times the seventh term, then its 15th term is
   (A) 15
   (B) 22
   (C) 0
   (D) 23

3. The value of x in following figure is

   (A) 30
   (B) 45
   (C) 40
   (D) 50

4. Two concentric circles are of radii 5cm and 3 cm . The length of the chord of the larger circle is
   (A) 9cm
   (B) 8.5cm
   (C) 8.2cm
   (D) 8cm

5. If two tangents are inclined with each other at an angle of 60^0 and are drawn to a circle of radius 3 cm, then the length of each tangent is equal to
   (A) $\frac{3\sqrt{3}}{2}$ cm
   (B) 6 cm
   (C) 3 cm
   (D) $3\sqrt{3}$ cm

6. The diameter of a semicircle is 14 cm. Its perimeter (in m) is
   (A) 22
   (B) 36
   (C) 44
   (D) 58

7. A solid sphere of radius r is melted and cast into shape of a solid cone of height r. Radius of the base of the cone is
   (A). r   (B) 2r   (C) 3r   (D) 4r