EduSahara™ Learning Center Assignment

Grade : Class X, CBSE
Chapter : Circles
Name : Circles Miscellaneous

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1. Which of the following statements are true?
   a) Atmost one chord can be drawn on a circle with a certain length
   b) A chord divides a circle into two sectors
   c) The diameter is the longest chord
   d) The radius is the shortest chord
   e) A chord divides a circle into two segments

   (i) {c,e} (ii) {d,a,c} (iii) {b,e,c} (iv) {b,e} (v) {a,c}

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2. Which of the following statements are true?
   a) The farther the chord is from the centre, the larger the angle it subtends at the centre
   b) The longest chord of the circle passes through the centre of the circle
   c) No two chords bisects each other
   d) Equal length chords subtend equal angles at the centre of the circle
   e) Equal length chords are equidistant from the centre of the circle

   (i) {a,b,d} (ii) {a,c,e} (iii) {a,b} (iv) {c,d} (v) {b,d,e}

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3. Which of the following statements are true?
   a) The area enclosed by a chord and its minor arc is called minor segment
   b) The diameter divides the circle into two unequal parts
   c) The area enclosed by a chord and its major arc is called major segment
   d) A sector is the area enclosed by two radii and a chord
   e) A circle divides the plane on which it lies into three parts

   (i) {a,c,e} (ii) {b,a} (iii) {b,d,e} (iv) {d,c} (v) {b,a,c}

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4. Which of the following statements are true?
   a) A sector is the area enclosed by two radii and a chord
   b) The diameter divides the circle into two unequal parts
   c) Two chords bisect each other
   d) The midpoint of any diameter of a circle is its centre
   e) The longest of all chords of a circle is called diameter

   (i) {b,e} (ii) {a,d} (iii) {d,e} (iv) {b,e,d} (v) {c,a,d}

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5. Which of the following statements are true?
   a) If a trapezium is cyclic, it is a rectangle
   b) If a kite is cyclic, it is a square
   c) If a parallelogram is cyclic, it is a rectangle
   d) If a rhombus is cyclic, it is a square
   e) A cyclic quadrilateral is a regular polygon

   (i) {e,a,c} (ii) {a,c} (iii) {b,d} (iv) {c,d} (v) {b,d,c}

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6. Which of the following statements are true?

a) Only one circle can be drawn with a centre
b) Only one circle can be drawn passing through two points
c) Atmost one circle can be drawn passing through three non-collinear points
d) Infinite circles can be drawn passing through three collinear points
e) Exactly two tangents can be drawn parallel to a secant

(i) {b,e,c} (ii) {c,e} (iii) {b,e} (iv) {a,c} (v) {d,a,c}

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7. Which of the following are cyclic quadrilaterals?

a) trapezium
b) triangle
c) rhombus
d) square
e) rectangle
f) parallelogram

(i) {d,e} (ii) {a,e,d} (iii) {a,d} (iv) {c,f,d} (v) {b,e}

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8. Which of the following statements are true?

a) A maximum of four common tangents can be drawn touching any two circles
b) Atmost two common tangents can be drawn touching any two circles
c) Atmost three common tangents can be drawn touching two circles which touch each other
d) Atmost one common tangent can be drawn for any two concentric circles

(i) {b,c,a} (ii) {a,c} (iii) {d,c} (iv) {b,d,a} (v) {b,a}

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9. Which of the following statements are true?

a) A tangent is the limiting case of a secant
b) A radius is a limiting case of a diameter
c) A secant and a chord are same
d) A diameter is a limiting case of a chord
e) A secant has two end points

(i) {a,d} (ii) {b,a} (iii) {e,b,a} (iv) {c,d,a} (v) {c,d}

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10. Which of the following statements are true?

a) Only two tangents can be drawn from a point outside the circle
b) Only one tangent can be drawn through a point on a circle
c) Two tangents to a circle always intersect
d) Atmost one tangent can be drawn through a point inside the circle
e) The sides of a triangle can be tangents to a circle

(i) {c,a,b} (ii) {a,b,e} (iii) {c,d,e} (iv) {d,b} (v) {c,a}

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11. Which of the following statements are true?

a) A line parallel to a tangent is a secant
b) If two tangents are parallel, the distance between them is equal to the diameter of the circle
c) If two tangents to a circle intersect, their points of contact with the circle together with their point of intersection form an isosceles triangle
d) If two tangents are perpendicular, they form a right angled triangle with their points of contact with the circle and their point of intersection
e) Two different tangents can meet at a point on the circle

(i) {e,c} (ii) {a,b} (iii) {b,c,d} (iv) {a,b,c} (v) {a,e,d}

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12. Which of the following statements are true?

a) If two circles touch each other externally, there is only one common tangent
b) If two circles intersect, then two common tangents can be drawn
c) There exists four common tangents for any two non-intersecting circles
d) If two circles touch each other internally, there is only one common tangent

(i) {b,c,d} (ii) {a,d} (iii) {a,b,c} (iv) {a,c} (v) {a,b}

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13. Which of the following statements are true?

a) If two circles touch externally, the distance between their centres is the sum of their radii
b) If two circles touch internally, the distance between their centres is the difference of their radii
c) If two circles touch internally, the square of the distance between their centres is the difference of the squares of their radii
d) If two circles touch internally, their centres and the point of contact form a scalene triangle
e) If two circles touch externally, the square of the distance between their centres is the sum of the squares of their radii
f) If two circles touch externally, their centres and the point of contact form an isosceles triangle

(i) {a,b} (ii) {d,b} (iii) {e,f,a} (iv) {c,b,a} (v) {c,a}

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14. Which of the following statements are true?

a) If a circle can be inscribed in a quadrilateral, the sum of the lengths of a pair of opposite sides is equal to the other pair
b) It is always possible to inscribe a circle in a quadrilateral
c) If a circle can be inscribed in a quadrilateral, it must be a kite
d) It is always possible to inscribe a circle in a regular polygon
e) If a circle can be inscribed in a quadrilateral, then it must be a square

(i) {c,d} (ii) {e,b,a} (iii) {c,d,a} (iv) {b,a} (v) {a,d}

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15. Which of the following statements are true?

a) Angles subtended by equal length arcs in two circles are equal
b) Angles in the same segment are equal
c) Angles in the opposite segments are complementary
d) Angles in the opposite segments are supplementary

(i) {a,b} (ii) {b,d} (iii) {a,c,b} (iv) {c,d} (v) {a,d,b}

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16. The angle subtended by the semicircle at the centre is

(i) 210° (ii) 195° (iii) 185° (iv) 180° (v) 190°

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17. The angle subtended by the diameter at any point on the circle is

(i) 95° (ii) 120° (iii) 105° (iv) 100° (v) 90°

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18. The opposite angles in a cyclic quadrilateral are

(i) complementary
(ii) supplementary
(iii) linear pair
(iv) equal

19. If the radius of the circumcircle is half the length of a side of the triangle, then the triangle is

(i) right angle triangle

(ii) acute angled triangle

(iii) obtuse angled triangle

(iv) equilateral triangle

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20. Circles having common centre are called

(i) intersecting circles

(ii) similar circles

(iii) concentric circles

(iv) congruent circles

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21. If two circles are concentric, then

(i) their perimeters are same

(ii) their centres are same

(iii) their diameters are same

(iv) their radii are same

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22. With the vertices of a triangle △IJK as centres, three circles are drawn touching each other externally. If the sides of the triangle are 10 cm , 17 cm and 13 cm , find the radii of the circles

(i) 8 cm , 7 cm & 10 cm respectively

(ii) 3 cm , 12 cm & 10 cm respectively

(iii) 3 cm , 7 cm & 15 cm respectively

(iv) 3 cm , 7 cm & 10 cm respectively

(v) 8 cm , 12 cm & 15 cm respectively

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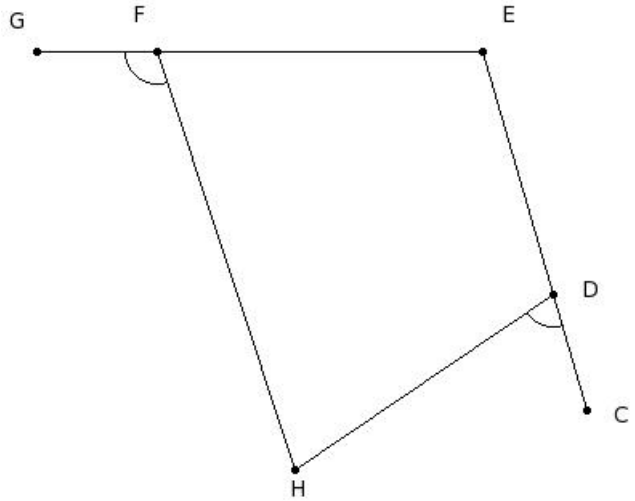
23. In the given figure, DEFH is a cyclic quadrilateral where EF and ED are produced to G and C respectively. If ∠CDH = 72°, find ∠GFH



(i) 118° (ii) 138° (iii) 113° (iv) 108° (v) 123°

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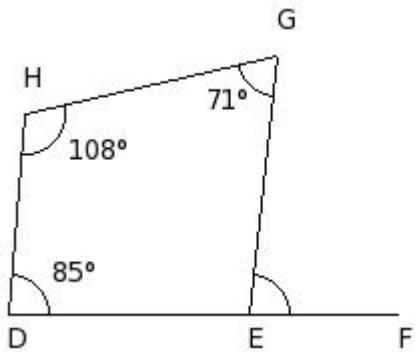
24. In the given figure, ∠D = 85° , ∠G = 71° and ∠H = 108°, find ∠GEF



(i) 94° (ii) 89° (iii) 84° (iv) 99° (v) 114°

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25. Which of the following statements are true?
    a) A cyclic trapezium is a rectangle
    b) A cyclic parallelogram is a rhombus
    c) A cyclic parallelogram is a rectangle
    d) A cyclic kite is a square
    e) A cyclic rhombus is a square

(i) {b,e,c} (ii) {d,a,c} (iii) {a,c} (iv) {b,e} (v) {c,e}

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26. Which of the following statements are true?
    a) An isosceles trapezium is cyclic
    b) All parallelograms are cyclic
    c) Either pair of opposite angles of a cyclic quadrilateral are supplementary
    d) A quadrilateral in which the diagonals are equal and bisect each other is cyclic
    e) The exterior angle of a quadrilateral and its interior opposite angle are supplementary

(i) {b,e,d} (ii) {b,a,c} (iii) {e,c} (iv) {a,c,d} (v) {b,a}

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27. Which of the following are not cyclic quadrilaterals?
    a) rhombus
    b) isosceles trapezium
    c) kite
    d) rectangle
    e) square

(i) {e,b,a} (ii) {d,c,a} (iii) {d,c} (iv) {a,c} (v) {b,a}

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28. In triangle GHI, if a circle is drawn with HI as diameter and if it passes through G it is a
    (i) right angle triangle
    (ii) equilateral triangle
    (iii) obtuse angled triangle
    (iv) acute angled triangle

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29. Which of the following statements are true?
    a) All diameters of a circle are chords
    b) $\frac{22}{7}$ is a rational number
    c) A circle divides the plane into three mutually disjoint sets of points
    d) π is a rational number

e) All chords of a circle are diameters

(i) {d,a,b} (ii) {d,a} (iii) {d,e,c} (iv) {e,b} (v) {a,b,c}

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30. If DEFG is a cyclic quadrilateral and $\angle D - \angle F = 38°$, then $\angle F$

(i) 81° (ii) 101° (iii) 86° (iv) 76° (v) 71°

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31. If IJKL is a cyclic parallelogram, then $\angle L$

(i) 105° (ii) 100° (iii) 120° (iv) 90° (v) 95°

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32. Points which lie on the circumference of the circle are called

(i) Similar points

(ii) Concurrent points

(iii) Concyclic points

(iv) Coincident points

(v) Cyclic points

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33. Two concentric circles are of radii 24 cm and 10 cm. Find the length of the chord of the outer circle that touches the inner circle

(i) 41.63 cm (ii) 43.63 cm (iii) 42.63 cm (iv) 45.63 cm (v) 44.63 cm

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Assignment Key

1) (i)
2) (v)
3) (i)
4) (iii)
5) (iv)
6) (ii)
7) (i)
8) (ii)
9) (i)
10) (ii)
11) (iii)
12) (i)
13) (i)
14) (v)
15) (ii)
16) (iv)
17) (v)
18) (ii)
19) (i)
20) (iii)
21) (ii)
22) (iv)
23) (iv)
24) (iii)
25) (v)
26) (iv)
27) (iv)
28) (i)
29) (v)
30) (v)
31) (iv)
32) (iii)
33) (ii)