**Circles Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Multiple Choice**

\_\_\_\_ 1. Which is **not** a relationship between the radius *r* and diameter *d* of a circle?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. |  | b. |  | c. |  | d. |  |

\_\_\_\_ 2. A circle has radius 14 cm. What is the diameter?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 14 cm | b. | 56 cm | c. | 7 cm | d. | 28 cm |

\_\_\_\_ 3. A circle has diameter 22 cm. What is the radius?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 22 cm | b. | 88 cm | c. | 44 cm | d. | 11 cm |

\_\_\_\_ 4. A circle has diameter 49.7 m. What is the radius?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 149.1 m | b. | 16.6 m | c. | 99.4 m | d. | 24.85 m |

\_\_\_\_ 5. What is the diameter of this circle?



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 31.4 m | b. | 47.1 m | c. | 7.9 m | d. | 15.7 m |

\_\_\_\_ 6. What is the radius of the circle?



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 6.8 cm | b. | 27.2 cm | c. | 13.6 cm | d. | 3.4 cm |

\_\_\_\_ 7. Identify all the diameters drawn in this circle.



|  |  |  |  |
| --- | --- | --- | --- |
| a. | AC | c. | OA, OB, OC |
| b. | BC | d. | OA, OB, OC, BC |

\_\_\_\_ 8. Four identical circles of the largest possible size are drawn on a square sheet of paper.

The side length of the square paper is 4.8 cm. What is the radius of each circle?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 0.6 cm | b. | 4.8 cm | c. | 2.4 cm | d. | 1.2 cm |

\_\_\_\_ 9. Estimate the circumference of this circle.



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 174 m | b. | 32 m | c. | 44 m | d. | 87 m |

\_\_\_\_ 10. Estimate the circumference of this circle.



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 18 cm | b. | 36 cm | c. | 15 cm | d. | 108 cm |

\_\_\_\_ 11. The circumference of a circle is 21 cm.

Calculate the radius. Round your answer to one decimal place.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 6.7 cm | b. | 10.5 cm | c. | 3.6 cm | d. | 3.3 cm |

\_\_\_\_ 12. Calculate the circumference of this circle. Round your answer to two decimal places.



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 46.50 m | b. | 22.20 m | c. | 23.25 m | d. | 172.03 m |

\_\_\_\_ 13. Find the diameter of a circle with a circumference of 14.3 mm.

Round your answer to one decimal place.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 7.2 mm | b. | 2.3 mm | c. | 4.6 mm | d. | 9.1 mm |

\_\_\_\_ 14. Calculate the circumference of this circle. Round your answer to one decimal place.



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 91.6 cm | b. | 33.9 cm | c. | 67.9 cm | d. | 17.0 cm |

15. A square has a side length of 32 cm.

What is the diameter of the largest circle that can be drawn in the square?

16. A circle has diameter 28 cm. Another circle has a diameter one-half the diameter of the original circle. What is the radius of the other circle?

17. A glass has a circular base with radius 4 cm.

How many glasses can be placed on a table measuring 34 cm by 25 cm?

18. A circular lawn has a diameter of 22 m. The lawn is surrounded by a path 5 m wide.

What is the distance around the outside edge of the path?

Round your answer to two decimal places.

19. A round table has a circumference of 4.3 m. What is the radius to the nearest centimetre?

20. A circular garden has radius 2.2 m. The garden is to be surrounded by edging wire.

Edging wire is sold in whole meter lengths.

|  |  |
| --- | --- |
| a) | How many meters of wire are needed? |
| b) | Edging wire costs $4.63/m. What is the cost to edge the garden? |

21. What is the perimeter of the semicircle? Round your answer to two decimal places.



22. This diagram shows 5 circles drawn in a square. What is the radius of the large circle and small circle?



23. The 2 sides of this running track are in the shape of semicircles.

Find the distance around the track.

Round your answer to the nearest meter. Show your work.



24. A metal gate is made of a square frame of side length 68 cm and 4 circles.

What is the total length of metal required to make the frame and the 4 circles?

Round your answer to the nearest centimeter. Show your work.



**Circles**

**Answer Section**

**MULTIPLE CHOICE**

1. ANS: B

2. ANS: D

3. ANS: D

4. ANS: D

5. ANS: A

6. ANS: A

7. ANS: A

8. ANS: D

9. ANS: A

10. ANS: B

11. ANS: D

12. ANS: A

13. ANS: C

14. ANS: B

15. ANS:

32 cm

16. ANS:

7 cm

17. ANS:

12 glasses

18. ANS:

*d* = 22 + 5  2 = 32

The diameter of the large circle, including the lawn and path, is 32 m.

*C* =  100.53

The distance around the outside edge of the path is 100.53 m.

19. ANS:

*r* = 4.3 (2 ) 0.7

The radius is about 0.7 m or 70 cm.

20. ANS:

|  |  |
| --- | --- |
| a) | 14 m |
| b) | $64.82 |

21. ANS:

30.85 cm

22. ANS:

The radius of the larger circle is 4 cm.

The radius of each smaller circle is 2 cm.

23. ANS:

Total distance: 

The distance around the track is about 373 m.

24. ANS:

Sample:

Length of square frame: 

Radius of each circle: 

Circumference of 4 circles: 

Total length of metal: 

699 cm of metal is required.