

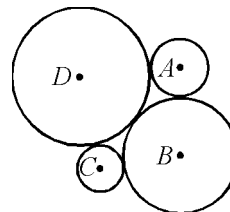
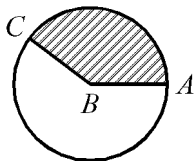
Grade 7 Hon Prep Work

7.9 Problems with Circles

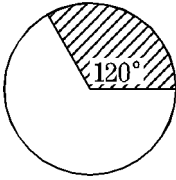
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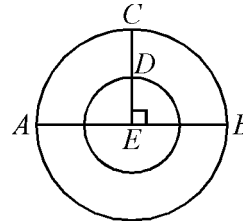
1. Find the circumference of the circle inscribed in a square of side 15.
2. An equilateral triangle has sides of length 8. Find the ratio of the area of the inscribed circle to the area of the circumscribed circle. Express your answer in the form $a:b$.
3. Find the area of a circle inscribed in a square with sides 12.8 cm in length. Express your answer in terms of π .
4. A bicycle has wheels with 25 cm diameters. How many revolutions must the wheels make to travel a distance of 628 meters? Use $\pi = 3.14$.
5. A regular hexagon is inscribed in a circle. If the hexagon has a side of length 4, what is the area of the circle?
6. What is the maximum number of pieces into which you can cut a circular pizza with 5 straight cuts from edge to edge if you do not stack the pieces?
7. 45% of circle B is shaded. How many degrees are in obtuse $\angle ABC$?
8. Four circles with centers A , B , C and D are mutually tangent. The areas of circles A , B , C and D are 25π , 100π , 16π , and 225π , respectively. How many units are in the perimeter of quadrilateral $ABCD$?



9. What percent of this circle is shaded? Express your answer as a mixed number.

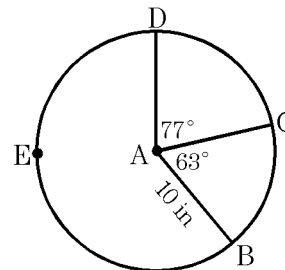


10. A person walks completely around the outer circle of the two concentric circles with centers E beginning at C and ending at C . She continues her walk from C to D and then around the inner circle beginning and ending at D . The distance from C to D is 50 yards and the distance from A to B is 200 yards. What is the total number of yards that she walked?

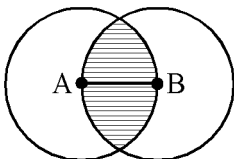


11. A caterer wants to cut a circular pie into congruent wedges so that each person gets the same percent of the pie. If each person is to receive 12.5% of the pie, how many degrees should form the central angle of the wedge?

12. Points B , C and D lie on circle A . Circle A has radius 10 inches. What is the number of square inches in the area of the sector bounded by radii \overline{AD} and \overline{AB} and major arc BED ? Express your answer to the nearest square inch.



13. Congruent circles A and B intersect such that \overline{AB} is a radius of each circle. If $AB = 6$ cm, what is the number of square centimeters in the area of the shaded region? Use 3.14 as an approximation for π , and express your answer as a decimal to the nearest tenth.



14. A wheel on a racing bike has a diameter of 28 inches. How many complete revolutions will the wheel make in one mile?

Answer List

- | | | |
|-------------------|---------------------|----------------------------|
| 1. 15π units | 2. $1 : 4$ | 3. $40.96\pi \text{ cm}^2$ |
| 4. 800 | 5. 16π sq units | 6. 16 |
| 7. 162 | 8. 68 | 9. $33\frac{1}{3}$ |
| 10. $300\pi + 50$ | 11. 45 | 12. 192 |
| 13. 44.2 | 14. 720 | |

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