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Geometry questions and answers

1. What is measurement of the indicated angle assuming the figure is a square? a. 45o b. 90o c. 60o d. 30o 2. What is the sum of all the angles in the rectangle above? a. 180o b. 360o c. 90o d. 120o 3. What is the measurement of the indicated angle? a. 45o b. 90o c. 60o d. 50o 4. If the line m is parallel to the side AB of ?ABC, what is angle a? a. 130o b. 25o c. 65o d. 50o 5. What is perimeter of the above shape? a. 12 cm b. 16 cm c. 6 cm d. 20 cm 6. What is (area of large circle) – (area of small circle) in the figure above? a. 8 π cm2 b. 10 π cm2 c. 12 π cm2 d. 16 π cm2 7. What is perimeter of ?ABC in the above shape? 25.5 cm 27 cm 30 cm 29 cm 8. What is the volume of the figure above? a. 125 cm3 b. 875 cm3 c. 1000 cm3 d. 500 cm3 9. What is the volume of the above solid made by a hollow cylinder with half in size of the larger cylinder? a. 1440 π in3 b. 1260 π in3 c. 1040 π in3 d. 960 π in3 1. B The diagonals of a square intersect perpendicularly with each other so each angle measures 90o x =90o 2. B a+b+c+d = ? The sum of angles around a point is 360o a+b+c+d = 360o 3. C The sum of angles around a point is 360o d+300 = 360o d = 60o 4. D Two parallel lines(m & side AB) intersected by side AC a= 50o (interior angles) 5. B The square with 2 cm side common to the rectangle apart from 4cm side Perimeter = 2+2+2+4+2+4 = 16 cm 6. C In the figure, we are given a large circle and a small circle inside it; with the diameter equal to the radius of the large one. The diameter of the small circle is 4 cm. This means that its radius is 2 cm. Since the diameter of the small circle is the radius of the large circle, the radius of the large circle is 4 cm. The area of a circle is calculated by: πr2 where r is the radius. Area of the small circle: π(2)2 = 4π Area of the large circle: π(4)22 = 16π The difference area is found by: Area of the large circle – Area of the small circle = 16π – 4π = 12π 7. D Perimeter of a shape with two squares and triangle ABC. Perimeter = 8.5+8.5+6+6 Perimeter = 29 cm. 8. C Large cube is made up of 8 smaller cubes of 5 cm sides. Volume = Volume of small cube x 8 Volume = (5 x 5 x 5) x 8, 125 x 8 Volume = 1000cm3 9. B Volume= Volume of large cylinder – Volume of small cylinder (Volume of cylinder = area of base x height) We know the small cylinder is 1/2 the size of the large cylinder So, Volume of the small cylinder = Large Cylinder (π 122x 10) – Small Cylinder(π 62x 5) = 1440π – 180π Volume of small cylinder = 1260π in3 See also our tutorial on Complex Shapes Not clearly labeling or identifying the given and unknown information in a problem Not understanding the properties and definitions of basic geometric figures (e.g. line, angle, triangle, etc.) Incorrectly using basic formulas (e.g. area of a triangle, Pythagorean theorem) Incorrectly interpreting geometric diagrams Not understanding the relationship between parallel lines and transversals Not understanding the relationship between angles and their degree measures Not understanding the relationship between perimeter and area Written by, Brian Stocker MA., Complete Test Preparation Inc. Date Published: Thursday, April 3rd, 2014 Date Modified: Tuesday, June 18th, 2024 Verifying that you are not a robot... 1. In a 30-60-90 triangle, the length of the hypotenuse is 6. What is the length of the shortest side?232. What is the area of a circle with a diameter of 16?3. The figure below contains only horizontal and vertical lines. Calculate its perimeter.4. Find the measure of the missing angle in the triangle below.5. The circumference of a circle is 30. What is its area?6. What is the sum of the measures of the interior angles of a hexagon?7. Find the area of the triangle below.8. The figure below is a parallelogram with two angles given in terms of x. Determine the value of x.9. Which of the following could be the side lengths of a right triangle?3, 13, and 144, 5, and 64, 9, and 105, 10, and 155, 12, and 1310. The figure below is an equilateral triangle with sides of length 6. What is the area of the triangle?121836Answer Key1. B. In a 30-60-90 triangle, the ratio of the lengths of the sides is 1: :2. In other words, the length of the longer leg is times the length of the shorter leg, and the hypotenuse is twice the length of the shorter leg. Therefore, the smallest side is half the length of the hypotenuse, so its length is .2. C. The area of a circle is given by the formula A = 2, where r is the radius of the circle. The problem provides the diameter of the circle, which is twice the radius. So, Now substitute this value into the area formula and calculate the area. 3. D. The perimeter of a figure is the length around it. To find the perimeter of a polygon, add the lengths of its sides. Start by filling in the missing lengths of the sides. For instance, the length of the shorter missing side is 6 because if you add it to the 3 on the left, the result should be the 9 on the right. Finally, add the side lengths together to find the perimeter.12 + 3 + 9 + 9 + 6 + 3 = 424. D. The sum of the angles of a triangle is 180°. Therefore, if we subtract the two given angles from 180°, the result will be the missing angle.180 – 95 – 35 = 50Therefore, the missing angle is 50°.5. B. The circumference of a circle is given by the formula C = 2, where r is the radius of the circle. Substitute the given circumference into this formula and solve for r. 30 = 2 r = 15 Therefore, the radius of the circle is 15. Use this to find the area of the circle. The area of a circle is given by the formula A= 2. Substitute the length of the radius into this formula and calculate the area. A =(15)2 = 225 6. B. The sum of the measures of the interior angles of a polygon with n sides is 180 . (n – 2) A hexagon has six sides. Therefore, substitute 6 for n into the formula and calculate. Therefore, the sum of the measures is 720°.7. A. The area of a triangle is given by the formula , where b is the length of the base and h is the triangle’s height. In the figure, the base is 8 and the height is 5. Substitute these values into the formula and calculate the area. 8. D. In a parallelogram, adjacent angles are complimentary; that is, they add to 180°. Use this to set up an equation, and then solve it for x. 9. E. If a triangle is a right triangle, then the lengths of its sides satisfy the Pythagorean Theorem, a2 + b2 = c2 . To determine which choice is correct, test each set of values by substituting them into the Pythagorean Theorem. Start with the first set of numbers: 3, 13, and 14. Since the result is not a true equality, the first set of values does not represent the side lengths of a right triangle. Test the other four choices. The only values that satisfy the Pythagorean Theorem are 5, 12, and 13. 10. D. Since the triangle is an equilateral triangle, its angles are 60°. In addition, the vertical line AX bisects the angle BAC, so it splits it into two congruent angles of 30° each. Therefore, the two smaller triangles are 30-60-90 triangles. Thus, the ratio of the lengths of the sides is 1: :2. Use this to fill in the information of the figure as follows.The area of a triangle is given by the formula , where b is the length of the base and h is the height. In the figure, the base is 3 + 3 = 6 and the height is 3. Substitute these values into the formula and calculate the area. Last Updated: June 4, 2019 Geometry questions, with answers, are provided for students to help them understand the topic more easily. Geometry is a chapter that has been included in almost all classes. The questions will be provided in accordance with NCERT guidelines. The use of geometry can be seen in both mathematics and everyday life. Thus, the fundamentals of this topic must be understood. The questions here will cover both the fundamentals and more difficult problems for students of all levels. As a result, students will be skilled in using it to solve geometry problems. Click here to learn more about Geometry. Definition: Geometry is a discipline of mathematics dealing with the study of various forms of shapes and sizes of real-world objects. We study different angles, transformations, and similarities of figures in geometry. The fundamentals of geometry are based on the concepts of point, line, angle, and plane. These fundamental geometrical concepts govern all geometrical shapes. Here, we are going to discuss different geometry questions, based on different concepts with solutions. Geometry Questions with Solutions 1. The lines that are equidistant from each other and never meet are called ____. Solution: Parallel lines are the lines that are equidistant from each other and never meet. The parallel lines are represented with a pair of vertical lines and its symbol is “||”. If AB and CD are the two parallel lines, it is denoted as AB || CD. 2. If two or more points lie on the same line, they are called _____. Solution: If two or more points lie on the same line, they are called collinear points. If points A, B and C lie on the same line “l”, then we can say that the points are collinear. Angles: An angle is defined as the shape created by two rays intersecting at a common endpoint. The symbol is used to symbolise an angle is “∠” and it is measured in degrees (°). Angles can be categorized based on their measurements. They are: Acute Angle: Angle < 90° Right Angle: Angle = 90° Obtuse Angle: Angle > 90° Straight Angle: Angle = 180° Reflex Angle: Angle > 180° and < 360° Complete Angle: Angle = 360° 3. Find the number of angles in the following figure. Solution: In the given figure, there are three individual angles, (i.e.) 30°, 20° and 40°. Two angles in a pair of 2. (i.e.) 20° + 30° = 50° and 20 + 40 = 60° One angle in a pair of 3 (i.e) 20° + 30° + 40° = 90° Hence, the total number of possible angles in the given figure is 6. 4. In the given figure, ∠BAC = 90°, and AD is perpendicular to BC. Find the number of right triangles in the given figure. Solution: Given: ∠BAC = 90° and AD⊥BC. Since AD⊥BC, the two possible right triangles obtained are ∠ADB and ∠ADC. Hence, the number of right triangles in the given figure is 3. I.e., ∠BAC = ∠ADB = ∠ADC = 90°. Two Dimensional Shapes: A two-dimensional shape can be characterised as a flat planar figure or a shape that has two dimensions — length and width. There is no thickness to two-dimensional shapes. Circles, triangles, squares, rectangles, and other 2D shapes are examples. The region enclosed by the figure is the area of a 2D shape. The perimeter of a two-dimensional shape is equal to the sum of the lengths of all its sides. Also read: Area and Perimeter Formulas. 5. The length of a rectangle is 3 more inches than its breadth. The area of the rectangle is 40 in2. What is the perimeter of the rectangle? Solution: Given: Area = 40 in2. Let “l” be the length and “b” be the breadth of the rectangle. According to the given question, b = b and l = 3+b We know that the area of a rectangle is lb units. So, 40 = (3+b)b 40 = 3b +b2 This can be written as b2+3b-40 = 0 On factoring the above equation, we get b= 5 and b= -8. Since the value of length cannot be negative, we have b = 5 inches. Substitute b = 5 in l = 3 + b, we get l = 3 + 5 = 8 inches. As we know, the perimeter of a rectangle is 2(l+b) units P = 2 (8 + 5) P = 2 (13) = 26 Hence, the perimeter of a rectangle is 26 inches. 6. What is the area of a circle in terms of π, whose diameter is 16 cm? Solution: Given: Diameter = 16 cm. Hence, Radius, r = 8 cm We know that the area of a circle = πr2 square units. Now, substitute r = 8 cm in the formula, we get A = π(8)2 cm2 A = 64π cm2 Hence, the area of a circle whose diameter is 16 cm = 64π cm2. 7. Find the missing angle in the given figure. Solution: Given two angles are 35° and 95°. Let the unknown angle be “x”. We know that sum of angles of a triangle is 180° Therefore, 35°+95°+x = 180° 130°+ x = 180° x = 180° – 130° x = 50° Hence, the missing angle is 50°. Three Dimensional Shapes: Solids with three dimensions, such as length, breadth, and height, are known as 3D forms. Cube, cuboid, cylinder, cone, sphere, and other 3D shapes are examples. Surface area and volume are two properties of 3D geometric shapes. The area covered by the 3D shape at the base, top, and all faces, including any curved surfaces, is referred to as the surface area. The volume is defined as the total amount of space required for the 3D shape. Also read: Surface Area and Volume Formulas. 8. Find the curved surface area of a hemisphere whose radius is 14 cm. Solution: Given: Radius = 14 cm. As we know, the curved surface area of a hemisphere is 2πr2 square units. CSA of hemisphere = 2×(22/7)×14×14 CSA = 2×22×2×14 CSA = 1232 Hence, the curved surface area of a hemisphere is 1232 cm2. 9. Find the volume of a cone in terms π, whose radius is 3 cm and height is 4 cm. Solution: Given: Radius = 3 cm Height = 4 cm We know that the formula to find the volume of a cone is V = (⅓)πr2h cubic units. Now, substitute the values in the formula, we get V = (⅓)π(3)2(4) V = π(3)(4) V = 12π cm3 Hence, the volume of a cone in terms of π is 12π cm3. 10. The base area of a cylinder is 154 cm2 and height is 5 cm. Find the volume of a cylinder. Solution: Given: Base area of a cylinder = 154 cm2. As the base area of a cylinder is a circle, we can write πr2 = 154cm2. We know that the volume of a cylinder is πr2h cubic units. V = 154(5) cm3 V = 770 cm3 Hence, the volume of a cylinder is 770 cm2. Practice Questions Find the area of a square whose side length is 6 cm. Find the number of obtuse angles in the given figure. 3. Find the number of line segments in the given figure and name them. Stay tuned to BYJU’S – The Learning App, and download the app to learn all Maths concepts by exploring more videos. Chat with our AI personalitiesEzraFaith is not about having all the answers, but learning to ask the right questions.What smells deter bears?Why are there craters on the moon?Ask a question and get an instant answer Free geometry tutorials on topics such as perpendicular bisector, central and inscribed angles, circumcircles, sine law and triangle properties to solve triangle problems. Also geometry problems with detailed solutions on triangles, polygons, parallelograms, trapezoids, pyramids and cones are included. Polar coordinates equations, conversion and graphing are also included. More challenging geometry problems are also included. Geometry Problems Triangles Circles Quadrilaterals Polygons Angles 3D Shapes Geometry Tutorials Circles Triangles Quadrilaterals Quadrilaterals, properties and formulas. Kite Questions with Solutions. Angles Polygons Regular Polygons. Tutorial to develop useful formulas for area of regular polygons. Other Geometry Topics Perpendicular Bisector Problems with Solutions. Formulas Table of Formulas for Geometry. A table of formulas for geometry, related to area and perimeter of triangles, rectangles, circles, sectors, and volume of sphere, cone, cylinder are presented. Challenge Geometry Problems Polar Coordinates Geometric Transformations Geometric Calculators and Worksheets Home Page Learning geometry offers numerous benefits that extend beyond the classroom. Here are some key advantages of learning geometry: Logical Reasoning: Geometry develops critical thinking and logical reasoning skills. It trains the mind to analyze problems, identify patterns, and make deductions based on given information. This ability to think logically is applicable in various real-life situations, including problem-solving and decision-making. Spatial Awareness: Geometry enhances spatial awareness and visualization skills. By working with shapes, angles, and spatial relationships, learners develop a better understanding of the physical world around them. This can be valuable in fields such as architecture, engineering, design, and navigation. Mathematical Skills: Geometry is a branch of mathematics that strengthens mathematical skills. It involves working with numbers, measurements, formulas, and calculations. Through geometry, students develop their numerical skills, including algebraic thinking, measurement concepts, and geometric transformations. Real-World Applications: Geometry has numerous practical applications in everyday life. It is used in areas such as construction, interior design, landscaping, map reading, and navigation. By understanding geometry, individuals can better comprehend and interact with the physical environment. Problem-Solving Abilities: Geometry promotes problem-solving abilities. By presenting complex geometric puzzles and challenges, it encourages learners to approach problems systematically, break them down into smaller components, and devise strategies for solving them. These problem-solving skills are transferable to various other subjects and real-life situations. In this article Part 1: OnlineExamMaker – Generate and share a geometry quiz with AI automatically The quickest way to assess the geometry knowledge of candidates is using an AI assessment platform like OnlineExamMaker. With OnlineExamMaker AI Question Generator, you are able to input content—like text, documents, or topics—and then automatically generate questions in various formats (e.g., multiple-choice, true/false, short answer). Its AI Exam Grader can automatically grade the exam and generate insightful reports after your candidate submit the assessment. What you will like: ● Create a question pool through the question bank and specify how many questions you want to be randomly selected among these questions. Allows the quiz taker to answer by uploading video or a Word document, adding an image, and recording an audio file. ● Display the feedback for correct or incorrect answers instantly after a question is answered. ● Create a lead generation form to collect an exam taker’s information, such as email, mobile phone, work title, company profile and so on. Part 2: 30 geometry quiz questions & answers 1. What is the sum of the interior angles of a triangle? a) 90 degrees b) 180 degrees c) 270 degrees d) 360 degrees Answer: b) 180 degrees 2. Which of the following shapes has no angles? a) Triangle b) Square c) Circle d) Rectangle Answer: c) Circle 3. What is the name for a triangle with three unequal sides? a) Equilateral triangle b) Isosceles triangle c) Scalene triangle d) Right triangle Answer: c) Scalene triangle 4. What is the term for a polygon with eight sides? a) Hexagon b) Octagon c) Decagon d) Pentagon Answer: b) Octagon 5. What is the formula for the circumference of a circle? a) C = πr² b) C = 2πr c) C = πd d) C = 2πd Answer: d) C = 2πd 6. What is the measure of each interior angle in a regular hexagon? a) 90 degrees b) 120 degrees c) 180 degrees d) 360 degrees Answer: b) 120 degrees 7. Which of the following is an example of a parallel line? a) Intersecting lines b) Perpendicular lines c) Vertical lines d) Horizontal lines Answer: d) Horizontal lines 8. What is the term for a line segment that connects two nonadjacent vertices of a polygon? a) Diagonal b) Median c) Altitude d) Perpendicular Answer: a) Diagonal 9. What is the name for a quadrilateral with exactly two pairs of parallel sides? a) Square b) Rectangle c) Rhombus d) Trapezoid Answer: d) Trapezoid 10. What is the measure of each angle in an equilateral triangle? a) 30 degrees b) 45 degrees c) 60 degrees d) 90 degrees Answer: c) 60 degrees 11. Which of the following is the formula for the area of a rectangle? a) A = l + w b) A = lw c) A = 2lw d) A = l/w Answer: b) A = lw 12. What is the name for a three-dimensional figure with six congruent square faces? a) Cylinder b) Pyramid c) Cube d) Sphere Answer: c) Cube 13. Which of the following is the formula for the volume of a cylinder? a) V = πr² b) V = 2πr c) V = πr d) V = πr²h Answer: d) V = πr²h 14. What is the measure of each angle in a right triangle? a) 45 degrees b) 60 degrees c) 90 degrees d) 180 degrees Answer: c) 90 degrees 15. What is the formula for the area of a circle? a) A = πr² b) A = 2πr c) A = πd d) A = 2πd Answer: a) A = πr² Part 3: Download geometry trivia questions & answers for free 16. Which of the following is the formula for the volume of a sphere? a) V = 4/3πr b) V = 4/3πr² c) V = 4πr d) V = 4πr³ Answer: b) V = 4/3πr² 17. What is the term for a triangle with one angle measuring more than 90 degrees? a) Obtuse triangle b) Acute triangle c) Right triangle d) Isosceles triangle Answer: a) Obtuse triangle 18. What is the name for a polygon with five sides? a) Hexagon b) Pentagon c) Octagon d) Heptagon Answer: b) Pentagon 19. What is the formula for the perimeter of a rectangle? a) P = l + w b) P = 2l + 2w c) P = lw d) P = 2lw Answer: b) P = 2l + 2w 20. Which of the following is the formula for the area of a triangle? a) A = l + w b) A = lw c) A = 2lw d) A = 1/2bh Answer: d) A = 1/2bh 21. What is the term for a line segment that connects the center of a circle to any point on its circumference? a) Radius b) Diameter c) Chord d) Tangent Answer: a) Radius 22. What is the measure of each angle in a rectangle? a) 60 degrees b) 90 degrees c) 120 degrees d) 180 degrees Answer: b) 90 degrees 23. Which of the following is the formula for the volume of a rectangular prism? a) V = l + w + h b) V = lwh c) V = 2lw + 2lh + 2wh d) V = l/w/h Answer: b) V = lwh 24. What is the term for a line segment that intersects two sides of a triangle? a) Altitude b) Median c) Perpendicular bisector d) Angle bisector Answer: a) Altitude 25. What is the measure of each angle in an isosceles triangle? a) 45 degrees b) 60 degrees c) 90 degrees d) 180 degrees Answer: c) 90 degrees 26. Which of the following is the formula for the volume of a cone? a) V = πr² b) V = 2πr c) V = πr d) V = 1/3πr²h Answer: d) V = 1/3πr²h 27. What is the term for a polygon with six sides? a) Hexagon b) Octagon c) Pentagon d) Heptagon Answer: a) Hexagon 28. What is the measure of each angle in a regular pentagon? a) 90 degrees b) 108 degrees c) 120 degrees d) 180 degrees Answer: b) 108 degrees 29. Which of the following is the formula for the circumference of a circle? a) C = πr² b) C = 2πr c) C = πd d) C = 2πd Answer: b) C = 2πr 30. What is the term for a triangle with three equal sides? a) Equilateral triangle b) Isosceles triangle c) Scalene triangle d) Right triangle Answer: a) Equilateral triangle Related Posts Share