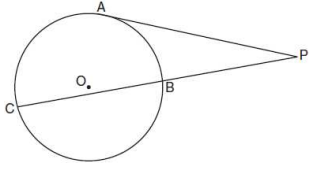
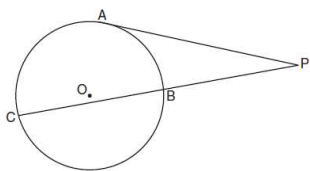


## SUMMER ASSIGNMENT GEOMETRY

Write Your Answer In The Answer Section

NAME: \_\_\_\_\_

<p>1) Which set of numbers represents the lengths of the sides of a triangle?</p> <p>(1) {14, 18, 13}                      (3) {13, 21, 4}                      (2) {5, 22, 17}                      (4) {26, 7, 18}</p>	<p>2) A quadrilateral whose diagonals bisect each other and are congruent is a</p> <p>(1) rhombus                              (3) trapezoid                      (2) rectangle                            (4) parallelogram</p>
<p>3) In <math>\triangle ABC</math>, <math>m\angle A = 40^\circ</math>, <math>m\angle B = 60^\circ</math>, and <math>m\angle C = 80^\circ</math>. Which expression correctly relates the lengths of the sides of this triangle?</p> <p>(1) <math>AB &lt; BC &lt; CA</math>                      (3) <math>AC &lt; BC &lt; AB</math>                      (2) <math>AB &lt; AC &lt; BC</math>                      (4) <math>BC &lt; AC &lt; AB</math></p>	<p>4) The center of a circular sunflower with a diameter of 4 centimeters is <math>(-2, 1)</math>. Which equation represents the sunflower?</p> <p>(1) <math>(x - 2)^2 + (y + 1)^2 = 2</math>                      (2) <math>(x + 2)^2 + (y - 1)^2 = 4</math>                      (3) <math>(x - 2)^2 + (y - 1)^2 = 4</math>                      (4) <math>(x + 2)^2 + (y - 1)^2 = 2</math></p>
<p>5) The sides of a triangle are 6, 8, and 10. What is the perimeter of a similar triangle whose shortest side is 3?</p> <p>(1) 24                                      (3) 48                      (2) 60                                      (4) 12</p>	<p>6) In simplest radical form, what is the mean proportional between 4 and 12?</p> <p>(1) <math>\sqrt{48}</math>    (2) <math>4\sqrt{3}</math>    (3) <math>3\sqrt{4}</math>    (4) <math>2\sqrt{8}</math></p>
<p>7) What is the slope of a line that is perpendicular to the line whose equation is <math>y = 2x + 6</math>?</p> <p>(1) 2                                      (3) -2                      (2) <math>\frac{1}{2}</math>                                      (4) <math>-\frac{1}{2}</math></p>	<p>8) Point <math>A</math> has coordinates <math>(6, -2)</math>. The midpoint of <math>\overline{AB}</math> has coordinates <math>(2, 2)</math>. What are the coordinates of point <math>B</math>?</p> <p>(1) <math>(-2, 6)</math>                              (3) <math>(2, -2)</math>                      (2) <math>(4, 0)</math>                              (4) <math>(-4, 6)</math></p>
<p>9) What is the equation of the locus of points 4 units from the origin?</p> <p>(1) <math>y = 4x</math>                              (3) <math>x^2 + y^2 = 4^2</math>                      (2) <math>x^2 + y^2 = 2^2</math>                      (4) <math>y = 4x^2</math></p>	<p>10) Which transformation is a direct isometry?</p> <p>(1) <math>D_2</math>                                      (3) <math>r_{y\text{-axis}}</math>                      (2) <math>D_{-2}</math>                                      (4) <math>T_{2,5}</math></p>
<p>11) What is the image of <math>(3, -8)</math> after it undergoes the composition of transformations <math>T_{1,4} \circ r_{x\text{-axis}}</math>?</p> <p>(1) <math>(4, 12)</math>                              (3) <math>(-2, -4)</math>                      (2) <math>(12, 4)</math>                              (4) <math>(-4, -2)</math></p>	<p>12) Tangents <math>\overline{PA}</math> and <math>\overline{PB}</math> are drawn to circle <math>O</math> from an external point, <math>P</math>, and radii <math>\overline{OA}</math> and <math>\overline{OB}</math> are drawn. If <math>m\angle APB = 40^\circ</math>, what is the measure of <math>\angle AOB</math>?</p> <p>(1) <math>140^\circ</math>                                      (3) <math>100^\circ</math>                      (2) <math>70^\circ</math>                                      (4) <math>50^\circ</math></p>
<p>13) What is the distance between points <math>(1, 5)</math> and <math>(-3, 3)</math>?</p> <p>(1) <math>\sqrt{12}</math>    (2) <math>\sqrt{14}</math>    (3) <math>\sqrt{20}</math>    (4) <math>\sqrt{24}</math></p>	<p>14) If the midpoints of the sides of a triangle are connected, the area of the triangle formed is what part of the area of the original triangle?</p> <p>(1) <math>\frac{1}{4}</math>    (2) <math>\frac{1}{2}</math>    (3) <math>\frac{3}{8}</math>    (4) <math>\frac{1}{3}</math></p>
<p>15) Which transformation is <i>not</i> an isometry?</p> <p>(1) <math>r_{y=x}</math>                                      (3) <math>T_{3,6}</math>                      (2) <math>R_{0,90^\circ}</math>                                      (4) <math>D_2</math></p>	<p>16) How many points are equidistant from two parallel lines and also equidistant from two points on one of the lines?</p> <p>(1) 1                                      (2) 2                                      (3) 3                                      (4) 4</p>
<p>17) In the coordinate plane, how many points are both 3 units from the origin and 3 units from the <math>x</math>-axis?</p> <p>(1) 4    (2) 1    (3) 2    (4) 0</p>	<p>18) The point of concurrency of the three altitudes of a triangle is called the</p> <p>(1) centroid                                      (3) orthocenter                      (2) incenter                                      (4) circumcenter</p>
<p>19) The equation of a circle is <math>(x - 3)^2 + (y + 1)^2 = 4</math>. The center and radius of this circle are</p> <p>(1) <math>C = (-3, 1)</math>    <math>r = 2</math>                              (3) <math>C = (-3, 1)</math>    <math>r = 4</math>                      (2) <math>C = (3, -1)</math>    <math>r = 2</math>                              (4) <math>C = (3, -1)</math>    <math>r = 4</math></p>	<p>20) An exterior angle at the base of an isosceles triangle is always</p> <p>(1) acute                                      (2) obtuse                                      (3) right                                      (4) straight</p>
<p>21) Which transformation does <i>not</i> preserve orientation?</p> <p>(1) translation                                      (3) reflection in the <math>y</math>-axis                      (2) dilation                                      (4) rotation</p>	<p>22) In an equilateral triangle, what is the difference between the sum of the exterior angles and the sum of the interior angles?</p> <p>(1) <math>180^\circ</math>                                      (3) <math>90^\circ</math>                      (2) <math>120^\circ</math>                                      (4) <math>60^\circ</math></p>
<p>23) What is the measure of an interior angle of a regular hexagon?</p> <p>(1) <math>720^\circ</math>                                      (2) <math>60^\circ</math>                                      (3) <math>120^\circ</math>                                      (4) <math>140^\circ</math></p>	<p>24) If the diagonals of a quadrilateral do <i>not</i> bisect each other, then the quadrilateral could be a</p> <p>(1) rectangle                                      (3) rhombus                      (2) square                                      (4) trapezoid</p>

<p>25) If <math>\overline{PA}</math> is 10 and <math>\overline{PB}</math> is 5, then what is the length of <math>\overline{BC}</math>?</p>  <p>(1) 20 (2) 15 (3) 100 (4) 25</p>	<p>26) If <math>\angle A</math> is <math>200^\circ</math> and <math>\angle B</math> is <math>80^\circ</math>, then what is <math>m\angle P</math>?</p>  <p>(1) <math>100^\circ</math>    (2) <math>120^\circ</math>    (3) <math>60^\circ</math>    (4) <math>140^\circ</math></p>
<p>27) If the vertex angle of an isosceles triangle measures <math>40^\circ</math>, then a base angle will measure</p> <p>(1) <math>40^\circ</math>    (2) <math>80^\circ</math>    (3) <math>70^\circ</math>    (4) <math>50^\circ</math></p>	<p>28) What is the image of <math>(-4, 6)</math> under a reflection in the origin?</p> <p>(1) <math>(6, -4)</math>    (2) <math>(4, -6)</math>    (3) <math>(-4, 6)</math>    (4) <math>(6, -4)</math></p>
<p>29) What is the measure of an exterior angle of a regular decagon?</p> <p>(1) <math>144^\circ</math>    (2) <math>36^\circ</math>    (3) <math>100^\circ</math>    (4) <math>72^\circ</math></p>	<p>30) The statement “<math>x</math> is <i>not</i> the square of an integer and <math>x</math> is a multiple of 3” is true when <math>x</math> is equal to</p> <p>(1) 9    (2) 18    (3) 32    (4) 36</p>
<p>31) A transversal intersects two lines. Which condition would always make the two lines parallel?</p> <p>(1) Vertical angles are congruent. (2) Alternate interior angles are congruent. (3) Corresponding angles are supplementary. (4) Same-side interior angles are complementary.</p>	<p>32) In circle <math>O</math>, chords <math>\overline{AB}</math> and <math>\overline{CD}</math> intersect at <math>E</math>. If <math>AE = 4</math>, <math>EB = 12</math>, and <math>ED = 16</math>, then <math>CE</math> equals</p> <p>(1) 19    (2) 16    (3) 3    (4) 48</p>
<p>33) A right circular cylinder has a volume of 1,000 cubic inches and a height of 8 inches. What is the radius of the cylinder to the <i>nearest tenth of an inch</i>?</p> <p>(1) 6.3    (3) 19.8 )    ) (2) 11.2    (4) 39.8 )    )</p>	<p>34) The lateral faces of a regular pyramid are composed of</p> <p>(1) squares    (3) congruent right triangles (2) rectangles    (4) congruent isosceles triangles</p>
<p>35) Through a given point, <math>P</math>, on a plane, how many lines can be drawn that are perpendicular to that plane?</p> <p>(1) 1    (2) 2    (3) more than 2    (4) none</p>	<p>36) What is the negation of the statement “I am not going to eat ice cream”?</p> <p>(1) I like ice cream. (2) I am going to eat ice cream. (3) If I eat ice cream, then I like ice cream. (4) If I don’t like ice cream, then I don’t eat ice cream.</p>
<p>37) Which condition does <i>not</i> prove that two triangles are congruent?</p> <p>(1) <math>SSS \cong SSS</math>    (3) <math>SAS \cong SAS</math> (2) <math>SSA \cong SSA</math>    (4) <math>ASA \cong ASA</math></p>	<p>38) In isosceles triangle <math>ABC</math>, <math>AB = BC</math>. Which statement will always be true?</p> <p>(1) <math>m\angle B = m\angle A</math>    (3) <math>m\angle A = m\angle C</math> (2) <math>m\angle A &gt; m\angle B</math>    (4) <math>m\angle C &lt; m\angle B</math></p>
<p>39) Line segment <math>AB</math> is tangent to circle <math>O</math> at <math>A</math>. Which type of triangle is always formed when points <math>A</math>, <math>B</math>, and <math>O</math> are connected?</p> <p>(1) right    (2) obtuse    (3) scalene    (4) isosceles</p>	<p>40) A right circular cone has a diameter of 8 inches and a height of 12 inches. What is the volume of the cone to the <i>nearest cubic inch</i>?</p> <p>(1) 201    (3) 603 (2) 481    (4) 804</p>

### ANSWERS

1.	11.	21.	31.
2.	12.	22.	32.
3.	13.	23.	33.
4.	14.	24.	34.
5.	15.	25.	35.
6.	16.	26.	36.
7.	17.	27.	37.
8.	18.	28.	38.
9.	19.	29.	39.
10.	20.	30.	40.