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| --- | --- |
| **Area of a Circle**Body_circles.png | Area of a Circle* π is a constant that can, for the purposes of the SAT, be written as 3.14 (or 3.14159)
* *r* is the radius of the circle (any line drawn from the center point straight to the edge of the circle)
 |
| Circumference of a CircleC=2πr (or C=πd) | **Circumference of a Circle*** is the diameter of the circle. It is a line that bisects the circle through the midpoint and touches two ends of the circle on opposite sides. It is twice the radius.
 |
| Area of a RectangleBody_rectangle.pngA=lw | **Area of a Rectangle***A=lw** *l* is the length of the rectangle
* *w* is the width of the rectangle
 |
| Area of a Triangle*Body_triangle_non-special.png* | Area of a Triangle* b is the length of the base of triangle (the edge of one side)
* h is the height of the triangle

In a right triangle, the height is the same as a side of the 90-degree angle. For non-right triangles, the height will drop down through the interior of the triangle, as shown above. |
| The Pythagorean Theorembody_pythag.pnga2+b2=c2 | The Pythagorean Theorem* In a right triangle, the two smaller sides (*a* and *b*) are each squared. Their sum is the equal to the square of the hypotenuse (c, longest side of the triangle).
 |
| Properties of Special Right Triangle: 30, 60, 90 Degree Triangle The side lengths are determined by the formula: x, x√3, and 2xThe side opposite 30 degrees is the smallest, with a measurement of x.The side opposite 60 degrees is the middle length, with a measurement of x√3.The side opposite 90 degree is the hypotenuse (longest side), with a length of 2x.For example, a 30-60-90 triangle may have side lengths of 5, 5√3, and 10. | Properties of Special Right Triangle: 30, 60, 90 Degree Trianglebody_306090_triangle.png |
| Properties of Special Right Triangle: Isosceles Trianglebody_iso_triangle.png | Properties of Special Right Triangle: Isosceles Triangle* An isosceles triangle has two sides that are equal in length and two equal angles opposite those sides.
* An isosceles right triangle always has a 90-degree angle and two 45 degree angles.

The side lengths are determined by the formula: x, x, x√2, with the hypotenuse (side opposite 90 degrees) having a length of one of the smaller sides \*√2. |
| Volume of a Rectangular Solid*Body_rectangular_solid.png* | Volume of a Rectangular Solid* *l* is the length of one of the sides.
* *h* is the height of the figure.
* *w* is the width of one of the sides.
 |
| Volume of a Cylinderbody_cylinder.png | Volume of a Cylinder* r is the radius of the circular side of the cylinder.
* h is the height of the cylinder
 |
| Volume of a Spherebody_volumesphere.png | Volume of a Sphere* r is the radius of the sphere.
 |
| Volume of a Conebody_volumecone.png | Volume of a Cone* r is the radius of the circular side of the cone.
* h is the height of the pointed part of the cone (as measured from the center of the circular part of the cone).
 |
| Volume of a Pyramidbody_volumepyramid.png | Volume of a Pyramid* l is the length of one of the edges of the rectangular part of the pyramid.
* h is the height of the figure at its peak (as measured from the center of the rectangular part of the pyramid).
* w is the width of one of the edges of the rectangular part of the pyramid.
 |
| **Geometry Laws****Law # 1****Law # 2****Law # 3** | **Law #1: the number of degrees in a circle is 360****Law #2: the number of radians in a circle is 2π****Law #3: the number of degrees in a triangle is 180** |
| **Slope Formula** | **Slope** **Formula*** Given two points, A(x1,y1),B(x2,y2), find the slope of the line that connects them:

|  |
| --- |
| (y2−y1) |
| (x2−x1) |

* The slope of a line is the

|  |
| --- |
| rise(verticalchange) |
| run(horizontalchange) |

 |
| **How to Write the Equation of a Line**body_line_through_origin.png | **How to Write the Equation of a Line*** y=mx+b **(If you get an equation that is NOT in this form (ex. mx−y=b), then re-write it into this format!)**
* *m* is the slope of the line.
* *b* is the y-intercept (the point where the line hits the y-axis).
* If the line passes through the origin (0,0), the line is written as y=mx.
 |
| **Midpoint formula**Given two points, A(x1,y1), B(x2,y2), find the midpoint of the line that connects them: | **Midpoint formula** |
| **Distance formula*** + Given two points, A(x1,y1),B(x2,y2), find the distance between them:
 | **Distance formula** |
| **Length of an arc*** Given a radius and a degree measure of an arc from the center, find the length of the arc
* Use the formula for the circumference multiplied by the angle of the arc divided by the total angle measure of the circle (360)
 | **Length of an arc** |
| **Area of an arc sector*** Given a radius and a degree measure of an arc from the center, find the area of the arc sector
 | **Area of an arc sector** |
| **Quadratic equation** * Given a polynomial in the form of ax2+bx+c, solve for x.
 | **Quadratic equation** |
| Probability of an outcome | Probability of an outcome |
| **PERCENTAGES*** Find x percent of a given number n.
 | **PERCENTAGES**Find x percent of a given number n. |
| **PERCENTAGES*** Find out what percent a number n is of another number m.
 | **PERCENTAGES*** Find out what percent a number n is of another number m.

 |
| **PERCENTAGES*** Find out what number n is x percent of.
 | **PERCENTAGES*** Find out what number n is x percent of.

 |
| Trigonometrybody_trig-1.png* Find the sine of an angle given the measures of the sides of the triangle
 | TrigonometryFind the sine of an angle given the measures of the sides of the triangle.sin(x)= Measure of the opposite side to the angle / Measure of the hypotenuseIn the figure above, the sine of the labeled angle would be a/h |
| Trigonometrybody_trig-1.png* Find the cosine of an angle given the measures of the sides of the triangle.
 | Trigonometrycos(x)= Measure of the adjacent side to the angle / Measure of the hypotenuseIn the figure above, the cosine of the labeled angle would be b/h |
| Trigonometrybody_trig-1.png* Find the tangent of an angle given the measures of the sides of the triangle.
 | Trigonometrytan(x)= Measure of the opposite side to the angle / Measure of the adjacent side to the angleIn the figure above, the tangent of the labeled angle would be a/b |
| TrigonometrySOHCAHTOA | Trigonometry**S**ine equals **O**pposite over **H**ypotenuse**C**osine equals **A**djacent over **H**ypotenuse**T**angent equals **O**pposite over **A**djacent |
| Probabilitycalculate how likely it is that a white marble would be drawn from a jar that contains three white marbles and four black marbles, it's easy enough to realize you need to take this probability formula: | Probability |
|  |  |