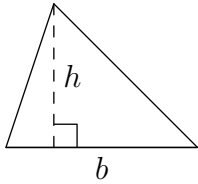


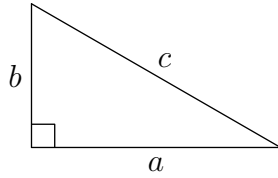
## SAT Math Given Facts & Formulas

The facts, formulas, and figures on this page are given at the beginning of each math section of the SAT (just as shown here, although much tinier in size).

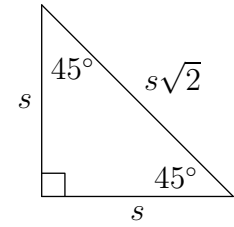
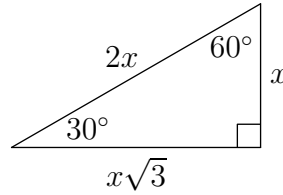
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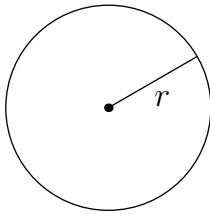
$$A = \frac{1}{2}bh$$



$$c^2 = a^2 + b^2$$

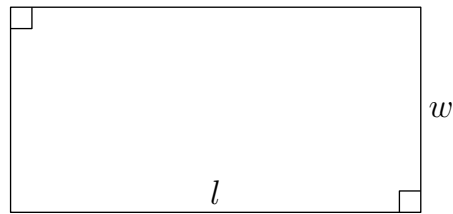


Special Right Triangles

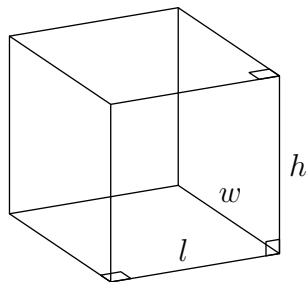


$$A = \pi r^2$$

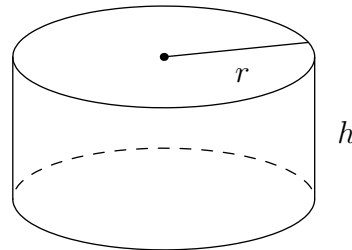
$$C = 2\pi r$$



$$A = lw$$



$$V = lwh$$



$$V = \pi r^2 h$$

The number of degrees of arc in a circle is 360.

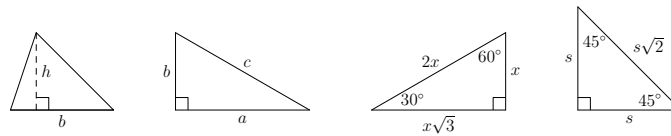
The sum of the measures in degrees of the angles of a triangle is 180.

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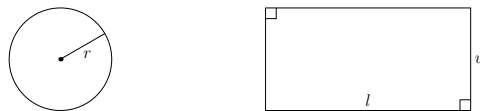
## SAT Math Given Facts & Formulas

Below is a brief explanation of the formulas and figures on page 1. Note that on the test you only get what is on page 1, not the explanations below.

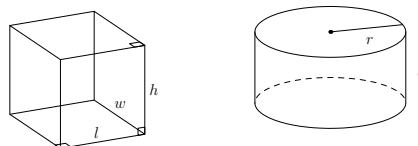
The first row of diagrams on page 1 shows several important formulas related to triangles. The first triangle on the left shows how to calculate the area of any triangle, given the base  $b$  and the height  $h$ , using  $A = b \cdot h/2$ . Note that any side can be the base, as long as the height goes from the base to the opposite corner.



The next three triangles in the diagram are right triangles (one angle is  $90^\circ$ ), and special formulas apply to these triangles. The first is the pythagorean theorem,  $c^2 = a^2 + b^2$ , which gives one side of a right triangle in terms of the other two sides. Here,  $c$  is always the side opposite the  $90^\circ$  angle; this is the longest side, sometimes called the hypotenuse (it doesn't matter which of the other two sides you call  $a$  or  $b$ ). The next two triangles, labeled "Special Right Triangles", are needed less often than the previous two. Here, " $x$ " and " $s$ " are used to mean any positive number, such as 1,  $1/2$ , etc. A typical example on the test: you are given a triangle with sides 2, 1, and  $\sqrt{3}$  and are asked for the angle opposite the  $\sqrt{3}$ . The figure shows that this angle is  $60^\circ$ .



The second row of diagrams on page 1 describes two very important formulas (a friendly hint: *memorize these*). The first gives the area and circumference of a circle given the radius ( $A = \pi r^2$  and  $C = 2\pi r$ ), and the second gives the area of a rectangle given the length and width ( $A = lw$ ). For circles, you are often given the diameter, not the radius, so don't forget to divide the diameter by 2 before using the circle formulas.



The last row of diagrams on page 1 shows formulas for the volume of two solids: a rectangular solid and a right cylinder. These are needed less often than the other formulas on page 1, but you should know how to use them. For example, given that the volume of a right cylinder is  $18\pi$  and its height is 2, can you determine the radius? (Answer: 3)