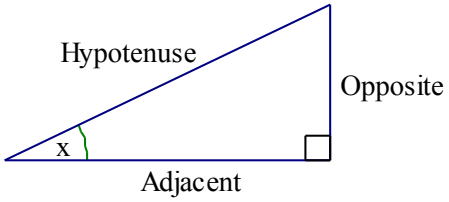
Formula sheet for Level 1 Geometry classes, June 2010 final exam.

Pythagorean triples 3-4-5 5-12-13 7-24-25 8-15-17 9-40-41

Trigonometry



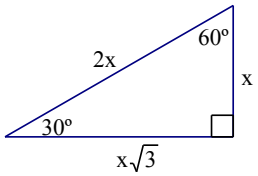
$$s = \frac{o}{h} \quad c = \frac{a}{h} \quad t = \frac{o}{a}$$

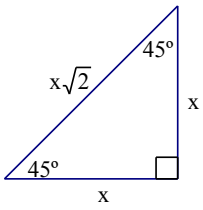
$$\sin(x) = \frac{opposite}{hypotenuse}$$

$$\cos(x) = \frac{adjacent}{hypotenuse}$$

$$\tan(x) = \frac{opposite}{adjacent}$$

Special right triangles





Polygons

Sum of interior angles

$S = (n - 2)180$

Coordinate geometry

Given points $A(x_1, y_1)$ and $B(x_2, y_2)$:

$$AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Midpoint of $\overline{AB} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Slope of $\overleftrightarrow{AB} = \frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1}$

Circumference / Area / Volume

Circle:

$C = 2\pi r$

$A = \pi r^2$

Triangle:

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

Quadrilaterals:

Parallelogram: $A = bh$

Square: $A = s^2$

Trapezoid: $A = \frac{1}{2} h(b_1 + b_2)$

Rectangle: $A = lw$

Quadrilateral with $\perp$ diagonals: $A = \frac{1}{2} d_1 d_2$

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

Cone: $V = \frac{1}{3} \pi r^2 h$

Pyramid: $V = \frac{1}{3} base\ area \cdot h$

Sphere: $V = \frac{4}{3} \pi r^3$