Miscellaneous

When money is involved (i.e - money of a company) round off the answer to its significant figure which is usually three. Also, add '.00' (ex - 29.00) if value is only two digits long.

triangle theories

area of a triangle	1/2 absin(C)
to find third side	$a^2 = b^2 + c^2 - 2bc*cosA$
to find angle	$cosA = (b^2 + c^2 - a^2)/2bc$
sin rule	a/sinA = b/sinB = c/sinC

Quadratics

General formula	$ax^2 + bx + c = 0$
Discriminant	$b^2 - 4ac$
Sum and product of roots	if roots are x_1 and x_2 $x_1 + x_2 = -b/a$ $x_1 * x_2 = c/a$
Vertex	$y = a(x-h)^2 + k$ coordinates of vertex: h = -b/2a Substitute h as x in the quadratic equation and find y
Axis of symmetry	x = -b/2a

Circular measures

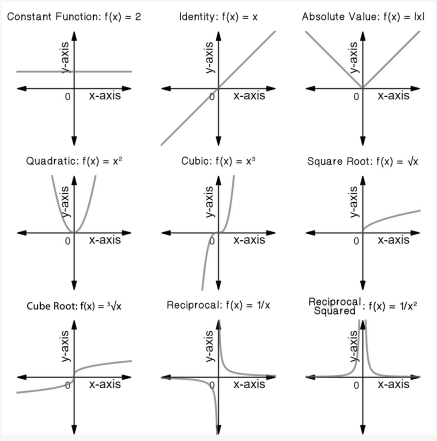
types of circles

$x^2 + y^2 = r^2$	$(x-a)^2 + (y-b)^2 = r^2$
$x^2 + y^2 + 2gx + 2fx + c = 0$	radius = root of $(g^2 + f^2 - c)$ center = -g,-f

Functions

Types of functions	One-to-many, many-to-one, one-to-one or many-to-many
Sequence of transformations	The order of vertical and horizontal transformations do not affect the graph. However the order of two vertical (or horizontal) transformations affects the final graph.
	to do transformations, first convert f to **a *f*(b(x + c)) + d** Do all the transformations from left to right
Composition of functions	Doman of composition function depends on domain of first function Range of resultant function depends on range of second functions

Functions - graphs



Coordinate geometry

Angle between two lines when slopes are given.	$\tan(\theta)$ = Absolute value of $(m_2 - m_1)/(1+m_2m_1)$
gradient of y axis is undefined	gradient of x axis is 0

If the question says 'at the same rate' it means that the lines are parallel

when intersects x axis and y axis are given	x/a + y/b = 1
considering general form of a line to be	Ax + By + C = 0
Distance from a Point to a Line	$d = [\|Ax_0 + By_0 + C\| / \sqrt{(A^2 + B^2)}]$
The centroid of a Triangle	x coordinates - $(x_1 + x_2 + x_3)/3$
	y coordinates - $(y_1 + y_2 + y_3)/3$

Shoelace method for area