

Test 1: Written to take 1 hour. NO calculator

Test 2: Written to take 1 hour. NO calculator on first page, WITH calculator on second page.

Test 3: Written to take 1 hour. NO calculator on first page, WITH calculator on second page.
Second page may have some identities provided.

Final Exam: Written to take 2 hour. NO calculator on first pages, WITH calculator on second pages. Second pages may have some identities provided.

Probable final exam content:

Simplify an expression

simple exponential expression

simplify a log expression

simplify trig expression

messier trig expression

Use Graphing Calculator

To compute

To solve

To graph

To verify

Graph & point-plot or sketch

all basic "parent" functions including a step function, $\log[\text{base } c](x)$, b^x , etc.

translations, rotations, reflections, dilations of the above

translations, rotations, reflections, dilations of a new function defined by a graph

a polynomial function

a rational function

sine, cosine, tangent -- the basic three

the reciprocals of the basic 3 trig functions

the inverses of the basic 3 trig functions

inverse trig functions (probably not)

Gaussian, logistic function graphs (not on the final)

graph a function described in words

Graph unknown functions without a calculator

Graph or sketch function similar to those you have seen before

Know what a graph will look like simply by reading its equation

Define and/or use and/or state

function
domain
range
zeros, roots, x-intercepts, y-intercepts
asymptotes -- vertical, horizontal, oblique (perhaps), other (no time to include it)
discontinuity
radian
arc length (no time to include it)
linear speed (no time to include it)
angular speed (no time to include it)
sine, cosine, tangent -- the basic three
the reciprocals of the basic 3 trigfunctions
the inverses of the basic 3 trigfunctions
domains, ranges of the basic three and their reciprocals
asymptotes, x-intercepts, y-intercepts of the basic three and their inverses
period
amplitude
phase shift
simple harmonic motion (no time to include it)
damped trig functions (no time to include it)
end behavior
angle of inclination
angle of depression
tangent, hypotenuse, linear coefficient, log
secant, reciprocal, asymptote, end behavior
discontinuity, rational, rational function.

Recall perfectly a formula or equation AND KNOW HOW TO USE IT AND WHEN TO USE IT:

Pythagorean theorem
quadratic formula
distance formula
slope of a line
midpoint formula (maybe, but probably not)
standard and general equation of a line
slope-intercept equation for a line
point-slope equation for a line
equation for a circle with center (h,k) and radius r
quadratic in general form
quadratic in standard form
vertex of a parabola
 $\log[\text{base } B](A)$

formula for compounding
formula for exponential growth/decay
a sine (or cosine) equation in which A , B , C , and D permit one to change the amplitude, period, phase shift, and vertical shift (but not the tangent or reciprocal functions)
Quotient Identities
Pythagorean Identities
Cofunction Identities
Odd/Even Identities
Sum & Difference Identities for Sine and Cosine, not Tangent (no time to include it)
Half-Angle Identities - (Cheat Sheet Provided)
Power-Reducing Identities - Cheat Sheet Provided)
Product-to-Sum Identities - (no time to include them)
Sum-to-Product Identities - (no time to include them)
Law of Cosines for a side and angle
Law of Sines
Gaussian, logistic function, where basic formulas will be provided
the sine of the sum of two angles
the cosine of the sum of two angles
the tangent of the sum of two angles (not included)

Write an equation or expression or description

point-slope, standard, general, slope-intercept equation for a line
equation for a circle
equation for a quadratic in general and standard forms
equation for a graphed or described polynomial function
equation for a graphed or described rational function
equation for compounding
equation for exponential growth/decay
a sine equation in which A , B , C , and D permit one to change the amplitude, period, phase shift, and vertical shift
equation for a function described in words
a logical progression from step to step in simplifying an expression, solving an equation, or proving an identity
an expression, which describes a situation which is familiar.
an expression, which describes a situation which is new to you.
an equation, for a situation which is new to you so that you may find an unknown value.
notes or a summary or list for a graph

Complete a procedure such as:

finding all possible rational roots
synthetic division
long division where one might divide by a linear binomial
find the inverse of a function
find the composition of one or more functions
expand or simplify a log expression

Solve

solve graphically
trig identities
quadratic by using the quadratic formula
quadratic by completing the square
equation with radicals
equation involving fractional exponents
equation with fractional expressions (probably not)
an inequality (probably not)
a higher order equation similar to a quadratic equation
a trig equation which requires use of the quadratic formula.
equation with logs requiring simply taking the inverse
exponential equation requiring simply taking the inverse
equation with logs requiring log laws
messier equation with logs
messier exponential equation

Solve a triangle:

only the legs of a right triangle
all sides and angles of 30-60-45 right triangles and other easy right triangles
in any quadrant
requiring law of sines
requiring cosine law

Prove

trig identity