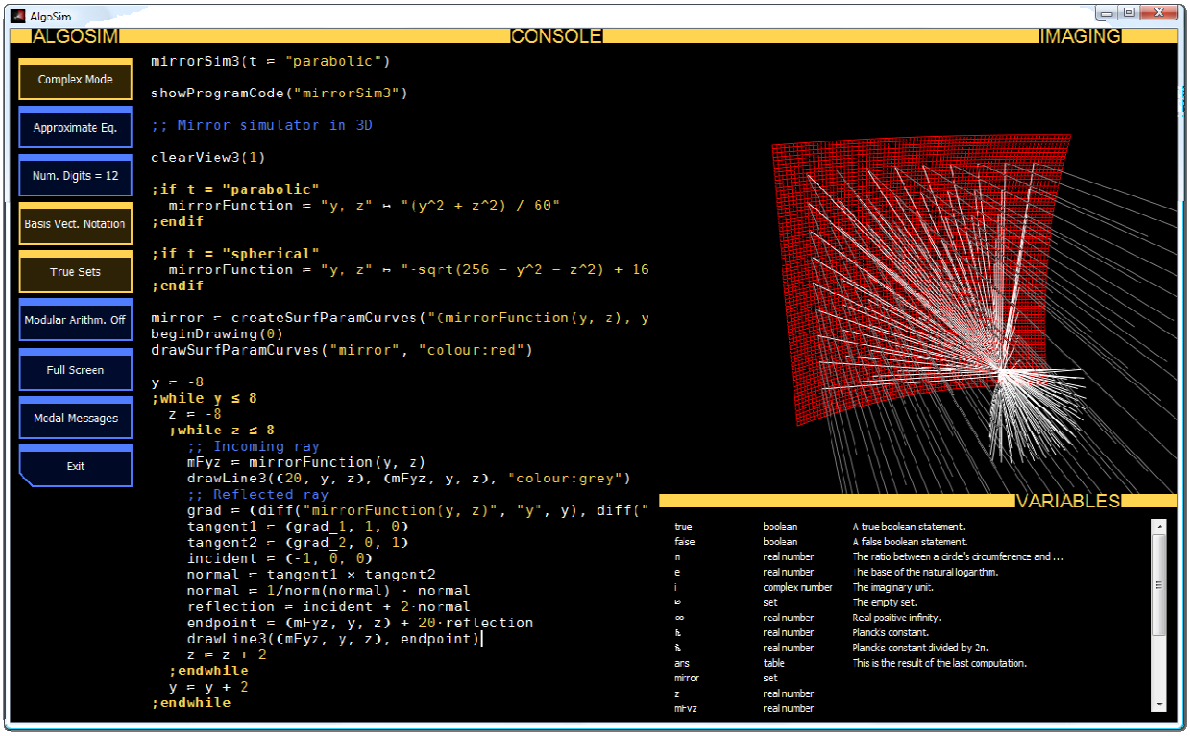
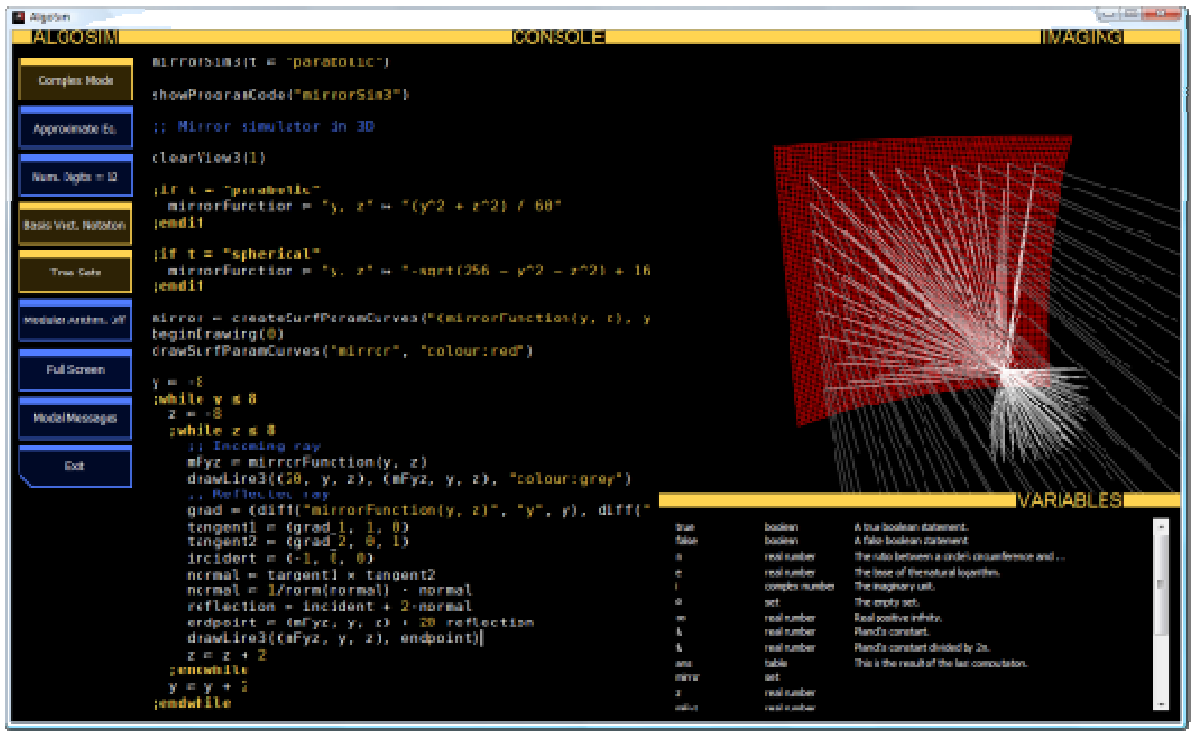

AlgoSim
ALGOSIM
CONSOLE
IMAGING
Complex Mode
Approximate Eq.
Num. Digits = 12
Basis Vect. Notation
True Sets
Modular Arithm. Off
Full Screen
Modal Messages
Exit
mirrorSim3(t = "parabolic")
showProgramCode("mirrorSim3")
;; Mirror simulator in 3D
clearView3(1)
;if t = "parabolic"
mirrorFunction = "y, z" ↦ "(y^2 + z^2) / 60"
;endif
;if t = "spherical"
mirrorFunction = "y, z" ↦ "-sqrt(256 - y^2 - z^2) + 16
;endif
mirror ← createSurfParamCurves("(mirrorFunction(y, z), y
beginDrawing(0)
drawSurfParamCurves("mirror", "colour:red")
y ← -8
;while y ≤ 8
z ← -8
;while z ≤ 8
;; Incoming ray
mFyz ← mirrorFunction(y, z)
drawLine3((20, y, z), (mFyz, y, z), "colour:grey")
;; Reflected ray
grad ← (diff("mirrorFunction(y, z)", "y", y), diff("
tangent1 ← (grad_1, 1, 0)
tangent2 ← (grad_2, 0, 1)
incident ← (-1, 0, 0)
normal ← tangent1 × tangent2
normal ← 1/norm(normal) · normal
reflection ← incident + 2·normal
endpoint ← (mFyz, y, z) + 20·reflection
drawLine3((mFyz, y, z), endpoint)
z ← z + 2
;endwhile
y ← y + 2
;endwhile
VARIABLES
true boolean A true boolean statement.
false boolean A false boolean statement.
π real number The ratio between a circle's circumference and ...
e real number The base of the natural logarithm.
i complex number The imaginary unit.
∅ set The empty set.
∞ real number Real positive infinity.
ħ real number Planck's constant.
ħ real number Planck's constant divided by 2π.
ans table This is the result of the last computation.
mirror set
z real number
mFyz real number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