Formulae:

V = <Vx, Vy>

|V|=sqrt(vx2+vy2)

Theta = arctan(vy/vx)

Work = a dot b = |a||b|cos theta

Area = torque = |a x b| = |a||b|sin theta

Theta = (u \* v) / (|u||v|)

Compab = (a · b) / |a|

Projab = (a · b)/|a|2 times a

Volume = |a \* (b x c)|

r = v\*t + r0

r = (1-t)r0 + tr1; 0 leq t leq 1

n(r\*r0) = 0

r = <x,y,z>

y = 1/4p (x-h)^2 + k (parabola)

(x-h)2 / a2 + (y-k)2 / b2 = 1 (ellipse) : c2 = a2 – b2

(x-h)2 / a2 - (y-k)2 / b2 = 1 (hyperbola) : c2 = a2 + b2

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Direction l1 <2,6,6>

Direction l2 <3,8,9>

Set t and s equal for each component

Move both on one side

Solve system of equations for both

Plug s and t into each equation, if x, y, and z match, they are intersect.

Line intersects plane like Gandalf question

GANDALF

Vector of movement direction is slope

After turn slope is inverse

Find where they intersect then

Vector of line of intersection between 2 planes with equations a and b

In form r0 + vt

v = a x b

r0 = solving the system of equations a and b