from manim import \*

from AbstractAnim import AbstractAnim

import cvo

class SAV(AbstractAnim):

def construct(self):

self.RenderSkillbancLogo()

self.Introduction()

self.fadeOutCurrentScene()

self.cube()

self.fadeOutCurrentScene()

self.areacube()

self.fadeOutCurrentScene()

self.tsacuboid()

self.fadeOutCurrentScene()

self.lsacuboid()

self.fadeOutCurrentScene()

self.tsacube()

self.fadeOutCurrentScene()

self.lsacube()

self.fadeOutCurrentScene()

self.volumecuboid()

self.fadeOutCurrentScene()

self.volumecube()

self.fadeOutCurrentScene()

self.SourceReference()

def Introduction(self):

self.setNumberOfCirclePositions(2)

self.angleChoice = [-TAU/4]

self.isRandom = False

p10=cvo.CVO().CreateCVO("SURFACE AREA AND VOLUME","")

p11=cvo.CVO().CreateCVO("SHAPES", "")

p11.extendOname(["CUBE","CUBOID"])

p11.setcircleradius(1.5)

p10.cvolist.append(p11)

self.construct1(p10,p10)

def cube(self):

self.setNumberOfCirclePositions(2)

self.angleChoice = [-TAU/4]

self.isRandom = False

p10=cvo.CVO().CreateCVO("CUBE AND CUBOID","")

p11=cvo.CVO().CreateCVO("Operations", "")

p11.extendOname(["AREA","VOLUME"])

p11.setcircleradius(1.5)

p10.cvolist.append(p11)

self.construct1(p10,p10)

def areacube(self):

self.setNumberOfCirclePositions(2)

self.angleChoice = [-TAU/4]

self.isRandom = False

p10=cvo.CVO().CreateCVO("AREA","")

p11=cvo.CVO().CreateCVO("AREA TYPES", "")

p11.extendOname(["LSA","TSA"])

p11.setcircleradius(1.5)

p10.cvolist.append(p11)

self.construct1(p10,p10)

def tsacuboid(self):

self.setNumberOfCirclePositions(5)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("total surface area of cuboid","2(lb+lh+bh)").setPosition([-4,0,0])

p11=cvo.CVO().CreateCVO("h variable ","6").setPosition([0,2.5,0])

p12=cvo.CVO().CreateCVO("l variable","2").setPosition([0,0,0])

p14=cvo.CVO().CreateCVO("b variable", "4").setPosition([0,-2.5,0])

p13=cvo.CVO().CreateCVO("TSA OF CUBOID","88").setPosition([4,0,0])

p10.cvolist.append(p11)

p10.cvolist.append(p12)

p10.cvolist.append(p14)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p11.pos,p13.pos)),Create(CurvedArrow(p12.pos,p13.pos)),Create(CurvedArrow(p14.pos,p13.pos)))

def lsacuboid(self):

self.setNumberOfCirclePositions(5)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("Lateral surface area of cuboid","2h(l+b)").setPosition([-4,0,0])

p11=cvo.CVO().CreateCVO("h variable ","6").setPosition([0,2.5,0])

p12=cvo.CVO().CreateCVO("l variable","2").setPosition([0,0,0])

p14=cvo.CVO().CreateCVO("b variable", "4").setPosition([0,-2.5,0])

p13=cvo.CVO().CreateCVO("LSA OF CUBOID","72").setPosition([4,0,0])

p10.cvolist.append(p11)

p10.cvolist.append(p12)

p10.cvolist.append(p14)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p11.pos,p13.pos)),Create(CurvedArrow(p12.pos,p13.pos)),Create(CurvedArrow(p14.pos,p13.pos)))

def tsacube(self):

self.setNumberOfCirclePositions(4)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("total surface area of cube","6a\*a").setPosition([-4,0,0])

p11=cvo.CVO().CreateCVO("Constant sides","6").setPosition([0,2,0])

p12=cvo.CVO().CreateCVO("a variable","2").setPosition([0,-2,0])

p13=cvo.CVO().CreateCVO("TSA OF CUBE", "24").setPosition([4,0,0])

p10.cvolist.append(p11)

p10.cvolist.append(p12)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p11.pos,p13.pos)),Create(CurvedArrow(p12.pos,p13.pos)))

def lsacube(self):

self.setNumberOfCirclePositions(4)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("lateral surface area of cube","4a\*a").setPosition([-4,0,0])

p11=cvo.CVO().CreateCVO("Constant sides","4").setPosition([0,2,0])

p12=cvo.CVO().CreateCVO("a variable","2").setPosition([0,-2,0])

p13=cvo.CVO().CreateCVO("LSA OF CUBE", "16").setPosition([4,0,0])

p10.cvolist.append(p11)

p10.cvolist.append(p12)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p11.pos,p13.pos)),Create(CurvedArrow(p12.pos,p13.pos)))

def volumecuboid(self):

self.setNumberOfCirclePositions(5)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("volume of cuboid","l\*b\*h").setPosition([-4,0,0])

p11=cvo.CVO().CreateCVO("h variable ","6").setPosition([0,2.5,0])

p12=cvo.CVO().CreateCVO("l variable","2").setPosition([0,0,0])

p14=cvo.CVO().CreateCVO("b variable", "4").setPosition([0,-2.5,0])

p13=cvo.CVO().CreateCVO("VOLUME OF CUBOID","48").setPosition([4,0,0])

p10.cvolist.append(p11)

p10.cvolist.append(p12)

p10.cvolist.append(p14)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p11.pos,p13.pos)),Create(CurvedArrow(p12.pos,p13.pos)),Create(CurvedArrow(p14.pos,p13.pos)))

def volumecube(self):

self.setNumberOfCirclePositions(4)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("volume of cube","a\*a\*a").setPosition([-4,0,0])

p12=cvo.CVO().CreateCVO("a variable","2").setPosition([0,0,0])

p13=cvo.CVO().CreateCVO("VOLUME OF CUBE", "8").setPosition([4,0,0])

p10.cvolist.append(p12)

self.construct1(p10,p10)

self.construct1(p13,p13)

self.play(Create(CurvedArrow(p12.pos,p13.pos)))

def SourceReference(self):

self.setNumberOfCirclePositions(4)

#self.angleChoice = [0,0,0]

self.isRandom = False

p10=cvo.CVO().CreateCVO("SOURCE CODE REFERENCE","").setPosition([0,3,0])

p12=cvo.CVO().CreateCVO("GITHUB URL","https://github.com/Skillbanc/manim-templates.git").setPosition([-4,0,0])

p13=cvo.CVO().CreateCVO("FILE NAME", "SAVanim.py").setPosition([4,0,0])

p10.cvolist.append(p12)

p10.cvolist.append(p13)

p12.setcircleradius(3)

p13.setcircleradius(2)

self.construct1(p10,p10)

self.construct1(p13,p13)

#self.play(Create(CurvedArrow(p12.pos,p13.pos)))

if \_\_name\_\_ == "\_\_main\_\_":

scene = SAV()

scene.render()