

2021 Geometry Sample Final

Lesson 053 | Geometry | Triangles, congruence and inequality • Circles, chords and equations • Volume and surface area

<https://www.youtube.com/watch?v=gkzP6x0vBzc>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

An isosceles triangle has equal base angles $(6x + 11)^\circ$ and vertex angle 134° . Find x and classify its angles.

02

Write the equation of a circle with center $(7,6)$ and radius 4. Find its x-extremes and y-extremes.

03

A right circular cylinder has radius 14 and height 25. Find lateral area, total surface area, and volume.

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04

An isosceles triangle has equal base angles $(6x + 8)^\circ$ and vertex angle 116° . Find x and classify its angles.

05

Write the equation of a circle with center $(-2, 2)$ and radius 4. Find its x-extremes and y-extremes.

06

A right circular cylinder has radius 11 and height 20. Find lateral area, total surface area, and volume.

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01

An isosceles triangle has equal base angles $(6x + 11)^\circ$ and vertex angle 134° . Find x and classify its angles.

Angle sum: $2(6x+11)+(134)=180$, giving $x=2$. Base angles 23° ; vertex angle 134° . Classify as right if an angle is 90° , obtuse if one exceeds 90° , otherwise acute.

02

Write the equation of a circle with center $(7,6)$ and radius 4. Find its x-extremes and y-extremes.

$(x-(7))^2+(y-6)^2=16$. Left/right: $(3,6)$, $(11,6)$; bottom/top: $(7,2)$, $(7,10)$.

03

A right circular cylinder has radius 14 and height 25. Find lateral area, total surface area, and volume.

Lateral area $2\pi rh=700\pi$. Total area $2\pi rh+2\pi r^2=1092\pi$. Volume $\pi r^2 h=4900\pi$. Use square units for areas and cubic units for volume.

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04

An isosceles triangle has equal base angles $(6x + 8)^\circ$ and vertex angle 116° . Find x and classify its angles.

Angle sum: $2(6x+8)+(116)=180$, giving $x=4$. Base angles 32° ; vertex angle 116° . Classify as right if an angle is 90° , obtuse if one exceeds 90° , otherwise acute.

05

Write the equation of a circle with center $(-2,2)$ and radius 4. Find its x-extremes and y-extremes.

$(x-(-2))^2+(y-2)^2=16$. Left/right: $(-6,2)$, $(2,2)$; bottom/top: $(-2,-2)$, $(-2,6)$.

06

A right circular cylinder has radius 11 and height 20. Find lateral area, total surface area, and volume.

Lateral area $2\pi rh=440\pi$. Total area $2\pi rh+2\pi r^2=682\pi$. Volume $\pi r^2 h=2420\pi$. Use square units for areas and cubic units for volume.