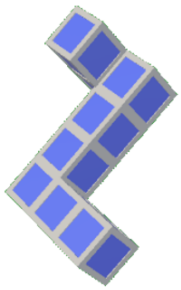
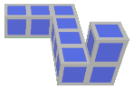
Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**1** Which answer is a rotation of this shape?



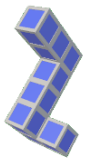
A

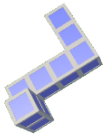


B



**2** Is the second shape a rotation of the first?





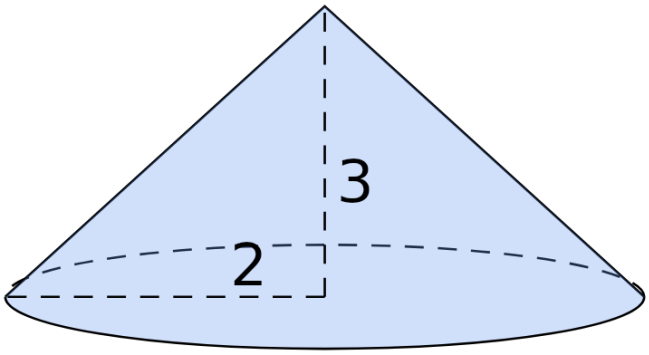
A

no

B

yes

**3** What is the volume of this Cone?



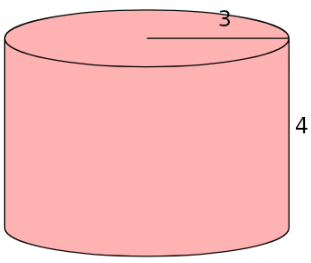

A

$$V=\frac{1}{3}2\pi 3^2$$

B

$$V=\frac{1}{3}3\pi 2^2$$

**4** What is the volume of this Cylinder?



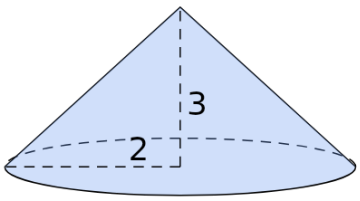

A

$$V=\pi\cdot 3^2\cdot 4$$

B

$$V=\pi\cdot 4^2\cdot 3$$

**5** What is the volume of this Cone?




A

12.57

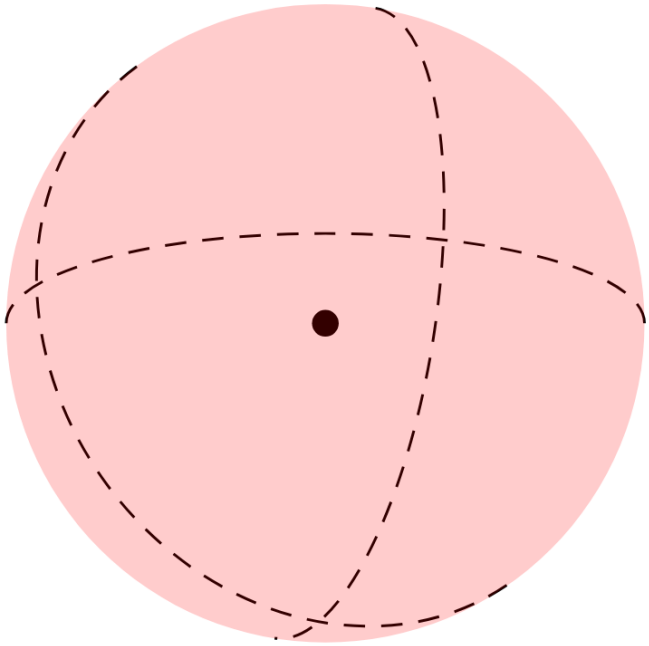
B

8.52

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**6** What is the volume of this Sphere?



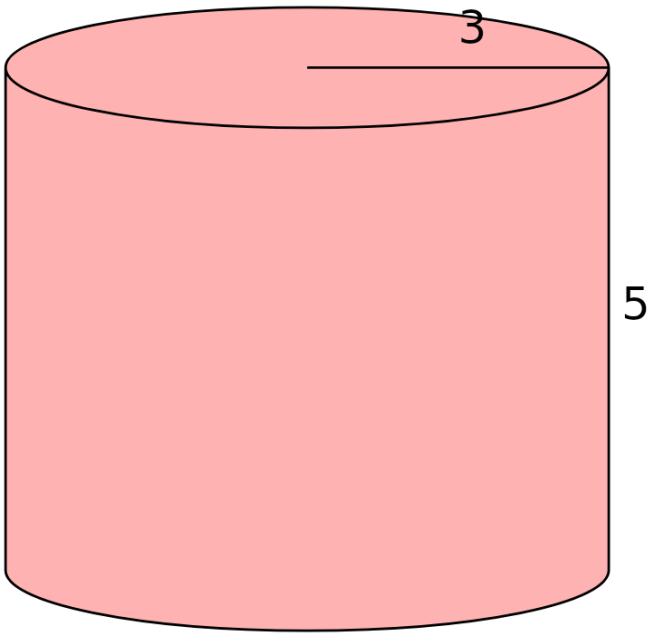

A

$$V = 4\pi \cdot 2^2$$

B

$$V = \frac{4}{3}\pi 2^3$$

**7** What is the volume of this Cylinder?




A

137.32

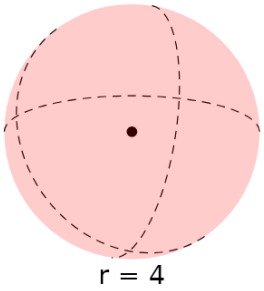
B

141.37

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

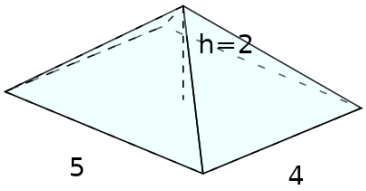
**8** What is the volume of this Sphere?




A: 268.08

B: 265.38

**9** What is the volume of this Rectangular Pyramid?




A: 13.33

B: 14.33

**10** What is the volume of this shape?

**A Cone with radius 4 and a height of 5**

A: $V = \frac{1}{3}5\pi4^2$

B: $V = \frac{1}{3}4\pi5^2$

**11** What is the volume of this shape?

**A Cylinder with radius 2 and height 5**

A: $V = \pi \cdot 5^2 \cdot 2$

B: $V = \pi \cdot 2^2 \cdot 5$

**12** What is the volume of this shape?

## A Sphere with radius 5

A: $V = \pi \cdot 5^2 \cdot 4$

B: $V = \frac{4}{3}\pi5^3$

**13** What is the volume of this shape?

**A Cone with radius 3 and a height of 5**

A: 48.47

B: 47.12

**14** What is the volume of this shape?

**A Cylinder with radius 3 and height 2**

A: 56.55

B: 59.25

**15** What is the volume of this shape?

## A Sphere with radius 2

A: 34.86

B: 33.51

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**16** What is the volume of this shape?

**A Rectangular Pyramid with a base of 5 by 4 and a height of 2**

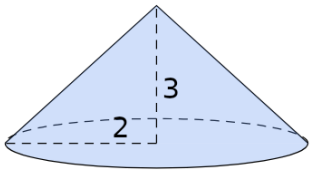
A

15.33

B

13.33

**17** What is the surface area of this Cone?



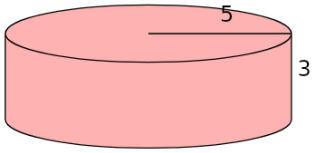

A

$SA = \pi \cdot 2 \cdot (2 + \sqrt{3^2 + 2^2})$

B

$SA = \pi \cdot 3 \cdot (3 + \sqrt{2^2 - 3^2})$

**18** What is the surface area of this Cylinder?



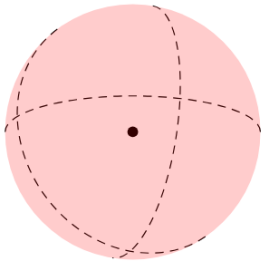

A

$SA = 2\pi \cdot 5 \cdot 3 + 2\pi 5^2$

B

$SA = 2\pi \cdot 3 \cdot 5 + 2\pi 3^2$

**19** What is the surface area of this Sphere?



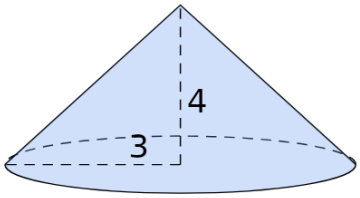

A

$SA = 4\pi \cdot 2^2$

B

$SA = \pi \cdot 2 \cdot (2 + \sqrt{4^2 - 2^2})$

**20** What is the surface area of this Cone?



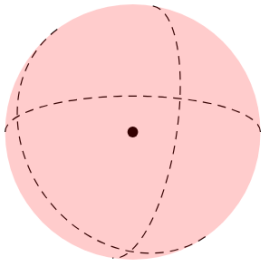

A

75.4

B

78.1

**21** What is the surface area of this Sphere?




A

109.05

B

113.1

**22** What is the surface area of this shape?

**A Cone with radius 2 and a height of 3**

A

$SA = \pi \cdot 2 \cdot (2 + \sqrt{3^2 + 2^2})$

B

$SA = \frac{1}{3} 3\pi 2^2$

**23** What is the surface area of this shape?

**A Cylinder with radius 3 and height 5**

A

$SA = 2\pi \cdot 3 \cdot 5 + 2\pi 3^2$

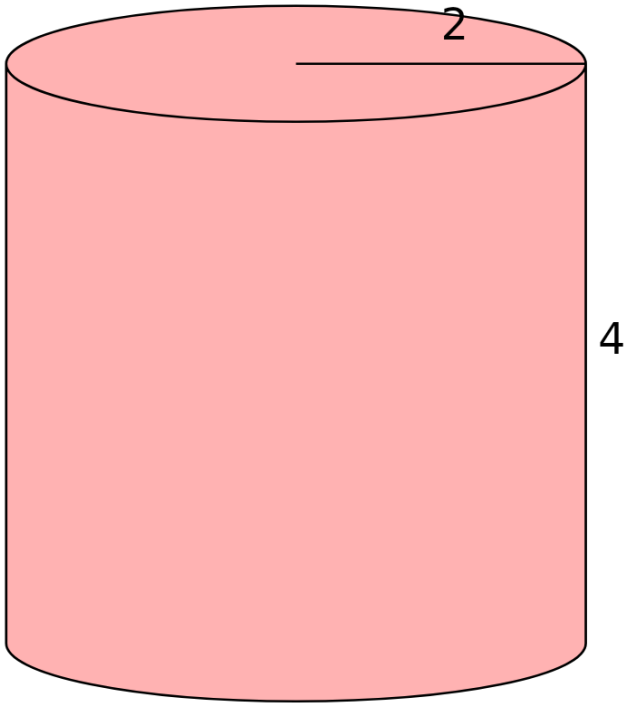
B

$SA = 2\pi \cdot 5 \cdot 3 + 2\pi 5^2$

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**24** What is the surface area of this Cylinder?



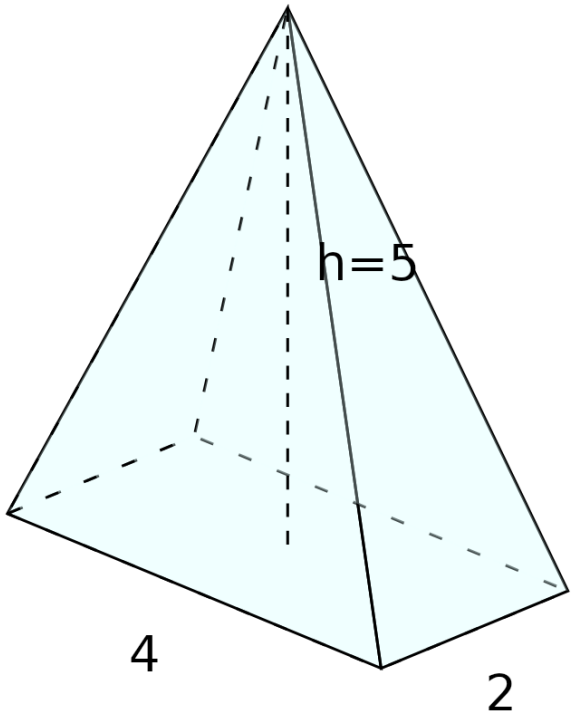

A

75.4

B

74.05

**25** What is the surface area of this Rectangular Pyramid?




A

42.35

B

44.35

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**26** What is the surface area of this shape?

## A Sphere with radius 2

A

$$SA = 4\pi \cdot 2^2$$

B

$$SA = 2\pi \cdot 2 \cdot 4 + 2\pi 2^2$$

**27** What is the surface area of this shape?

**A Cone with radius 2 and a height of 4**

A

40.67

B

37.97

**28** What is the surface area of this shape?

**A Cylinder with radius 2 and height 3**

A

66.88

B

62.83

**29** What is the surface area of this shape?

## A Sphere with radius 3

A

114.45

B

113.1

**30** What is the surface area of this shape?

**A Rectangular Pyramid with a base of 4 by 2 and a height of 3**

A

32.42

B

34.42

**31** What is the volume of this shape?

**A Cone with radius 4 and a height of 2**

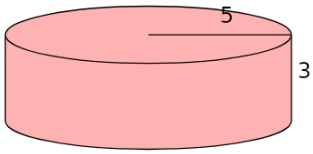
A

$$V = \frac{1}{3} 2\pi 4^2$$

B

$$V = \frac{1}{3} 4\pi 2^2$$

**32** What is the volume of this Cylinder?



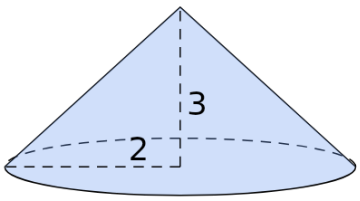

A

$$V = \pi \cdot 3^2 \cdot 5$$

B

$$V = \pi \cdot 5^2 \cdot 3$$

**33** What is the volume of this Cone?




A

12.57

B

8.52

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

**34** What is the volume of this shape?

**A Rectangular Pyramid with a base of 2 by 4 and a height of 3**

| A | B |
|---|---|
| 8 | 9 |

**35** What is the surface area of this shape?

**A Cylinder with radius 2 and height 3**

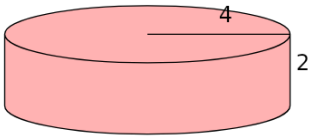
A

$$SA = 2\pi \cdot 2 \cdot 3 + 2\pi 2^2$$

B

$$SA = \pi \cdot 2^2 \cdot 3$$

**36** What is the surface area of this Cylinder?



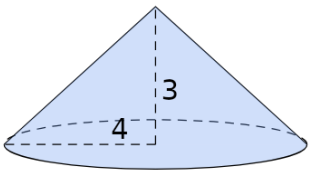

A

$$SA = 2\pi \cdot 4 \cdot 2 + 2\pi 4^2$$

B

$$SA = 2\pi \cdot 2 \cdot 4 + 2\pi 2^2$$

**37** What is the surface area of this Cone?



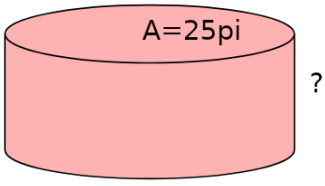

| A | B |
|---|---|
| 113.1 | 117.15 |

**38** What is the surface area of this shape?

**A Rectangular Pyramid with a base of 2 by 3 and a height of 5**

| A | B |
|---|---|
| 33.82 | 32.82 |

**39** What is the length of the missing side of this Cylinder?



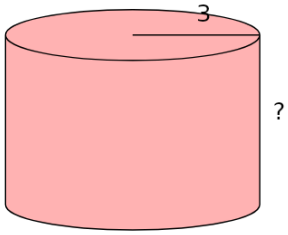

V=100pi

| A | B |
|---|---|
| $4$ | $\frac{1}{\pi}$ |
| C | D |
| $12$ | $\frac{4}{\pi}$ |
| E | F |
| $5 \cdot \pi$ | $4 \cdot \pi$ |

Name

# Geometry - Volume and Surface Area of Complex 3D Shapes - Advanced

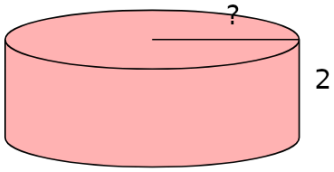
**40** What is the length of the missing side of this Cylinder?




V=36pi

| | |
|---|---|
| A $6 \cdot \pi$ | B $4$ |
| C $4 \cdot \pi$ | D $\frac{6}{\pi}$ |
| E $\frac{4}{\pi}$ | F $1$ |

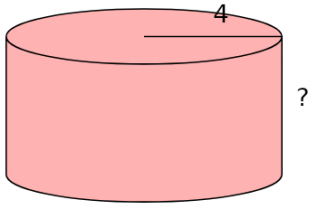
**41** What is the length of the missing side of this Cylinder?




V=18pi

| | |
|---|---|
| A $\frac{8}{\pi}$ | B $8 \cdot \pi$ |
| C $\frac{2}{\pi}$ | D $3 \cdot \pi$ |
| E $\frac{3}{\pi}$ | F $3$ |

**42** What is the length of the missing side of this Cylinder?




V=64

| | |
|---|---|
| A $\frac{5}{\pi}$ | B $\frac{4}{\pi}$ |
| C $4 \cdot \pi$ | D $12$ |
| E $5$ | F $4$ |