

Question ID 752cef17

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 752cef17

A circle has a radius of **43** meters. What is the area, in square meters, of the circle?

- A. $\frac{43\pi}{2}$
- B. **43π**
- C. 86π
- D. $1,849\pi$

Question ID c86d574d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: c86d574d

A right circular cone has a volume of $71,148\pi$ cubic centimeters and the area of its base is $5,929\pi$ square centimeters. What is the slant height, in centimeters, of this cone?

- A. 12
- B. 36
- C. 77
- D. 85

Question ID 707f7a8a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 707f7a8a

A triangle has a base length of **56** centimeters and a height of **112** centimeters. What is the area, in square centimeters, of the triangle?

- A. **168**
- B. **1,568**
- C. **3,136**
- D. **6,272**

Question ID bd731427

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: bd731427

A right circular cylinder has a volume of **432** cubic centimeters. The area of the base of the cylinder is **24** square centimeters. What is the height, in centimeters, of the cylinder?

- A. **18**
- B. **24**
- C. **216**
- D. **10,368**

Question ID ebcbcf82

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: ebcbcf82

Circle A has a radius of $3n$ and circle B has a radius of $129n$, where n is a positive constant. The area of circle B is how many times the area of circle A ?

- A. 43
- B. 86
- C. 129
- D. 1,849

Question ID cf63d338

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

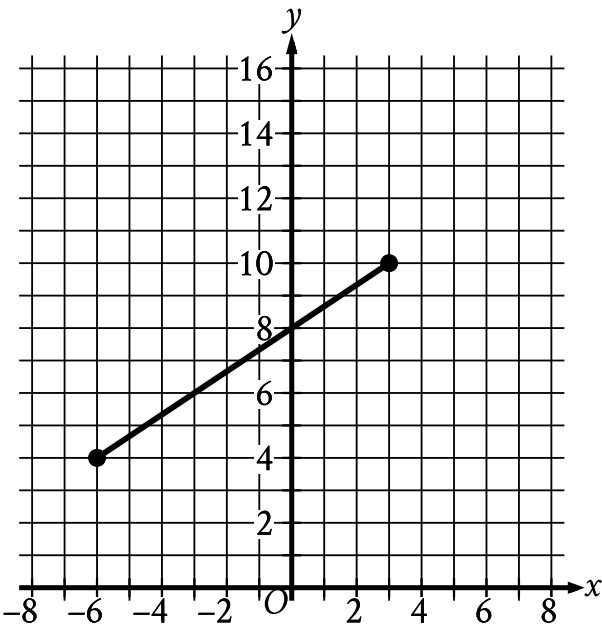
ID: cf63d338

A rectangular poster has an area of **360** square inches. A copy of the poster is made in which the length and width of the original poster are each increased by **20%**. What is the area of the copy, in square inches?

Question ID beae147d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div></div> <div></div> <div></div>

ID: beae147d



The line segment shown in the xy -plane represents one of the legs of a right triangle. The area of this triangle is $36\sqrt{13}$ square units. What is the length, in units, of the other leg of this triangle?

- A. 12
- B. 24
- C. $3\sqrt{13}$
- D. $18\sqrt{13}$

Question ID 33ddd1e0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

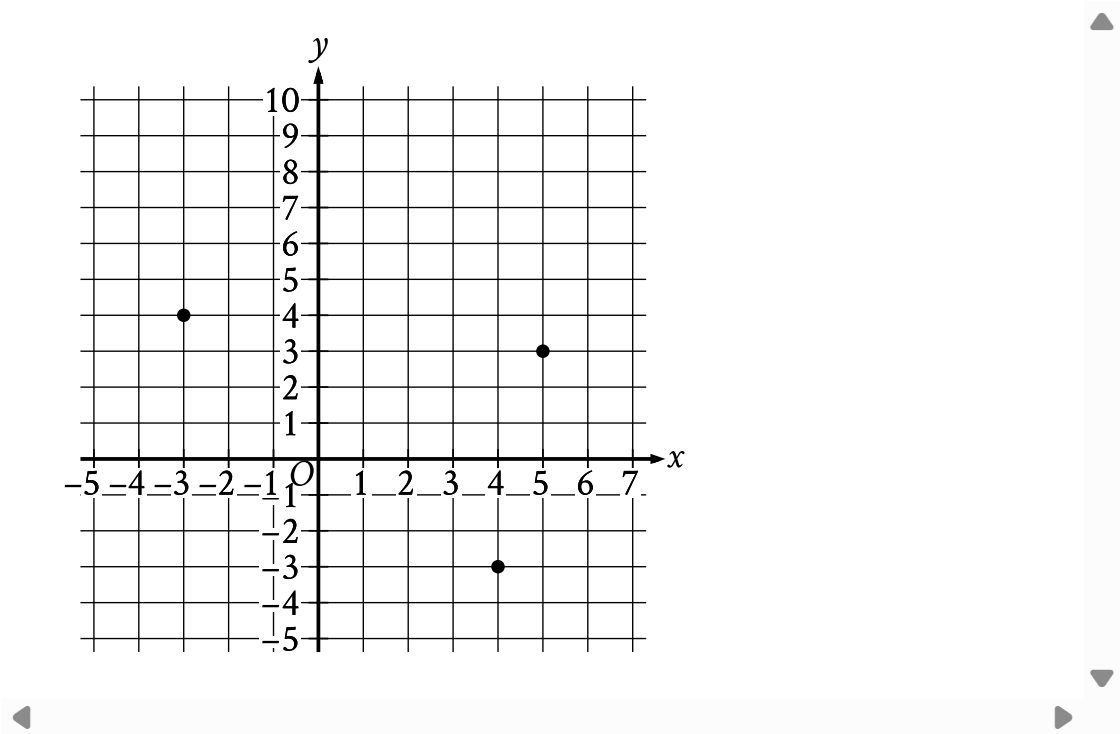
ID: 33ddd1e0

The length of each edge of a box is **29** inches. Each side of the box is in the shape of a square. The box does not have a lid. What is the exterior surface area, in square inches, of this box without a lid?

Question ID 9b9a8aef

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div></div> <div></div> <div></div>

ID: 9b9a8aef

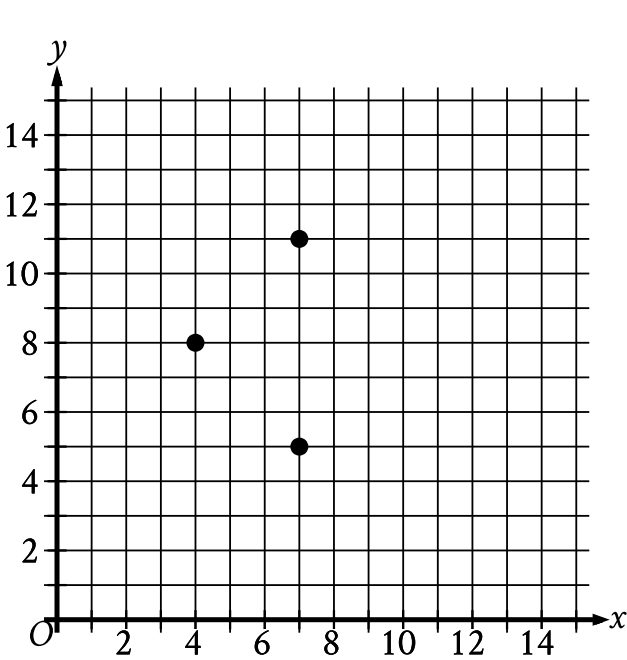


What is the area, in square units, of the triangle formed by connecting the three points shown?

Question ID 226ba345

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 226ba345



The three points shown define a circle. The circumference of this circle is $k\pi$, where k is a constant. What is the value of k ?

- A. 3
- B. 6
- C. 7
- D. 9

Question ID f682f810

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: f682f810

The floor of a ballroom has an area of **600** square meters. An architect creates a scale model of the floor of the ballroom, where the length of each side of the model is $\frac{1}{10}$ times the length of the corresponding side of the actual floor of the ballroom. What is the area, in square meters, of the scale model?

- A. **6**
- B. **10**
- C. **60**
- D. **150**

Question ID 2eb9177a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 2eb9177a

A triangle has a base length of **10** centimeters and a corresponding height of **70** centimeters. What is the area, in square centimeters, of the triangle?

- A. **700**
- B. **350**
- C. **175**
- D. **80**

Question ID ee0f7ad7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: ee0f7ad7

A cylinder has a diameter of **8** inches and a height of **12** inches. What is the volume, in cubic inches, of the cylinder?

- A. **16π**
- B. **96π**
- C. **192π**
- D. **768π**

Question ID b23cbeba

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: b23cbeba

A right circular cylinder has a base diameter of **22** centimeters and a height of **6** centimeters. What is the volume, in cubic centimeters, of the cylinder?

- A. **132** π
- B. **264** π
- C. **726** π
- D. **2,904** π

Question ID aa5a26a3

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: aa5a26a3

Two identical rectangular prisms each have a height of **90 centimeters (cm)**. The base of each prism is a square, and the surface area of each prism is **$K \text{ cm}^2$** . If the prisms are glued together along a square base, the resulting prism has a surface area of $\frac{92}{47}K \text{ cm}^2$. What is the side length, in **cm**, of each square base?

- A. **4**
- B. **8**
- C. **9**
- D. **16**

Question ID e8a76dc3

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: e8a76dc3

Circle K has a radius of **4 millimeters (mm)**. Circle L has an area of **$100\pi \text{ mm}^2$** . What is the total area, **in mm^2** , of circles K and L ?

- A. **14π**
- B. **28π**
- C. **56π**
- D. **116π**

Question ID 6c5aefc0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 6c5aefc0

A right circular cylinder has a volume of **377** cubic centimeters. The area of the base of the cylinder is **13** square centimeters. What is the height, in centimeters, of the cylinder?

Question ID 5f20344a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 5f20344a

A right circular cylinder has a height of **8 meters (m)** and a base with a radius of **12 m**. What is the volume, **in m³**, of the cylinder?

- A. **8π**
- B. **20π**
- C. **768π**
- D. **$1,152\pi$**

Question ID 96e751b0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 96e751b0

A sphere has a radius of $\frac{17}{5}$ feet. What is the volume, in cubic feet, of the sphere?

- A. $\frac{5\pi}{17}$
- B. $\frac{68\pi}{15}$
- C. $\frac{32\pi}{5}$
- D. $\frac{19,652\pi}{375}$

Question ID 6245a010

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 6245a010

The circumference of the base of a right circular cylinder is **20π** meters, and the height of the cylinder is **6** meters. What is the volume, in cubic meters, of the cylinder?

- A. **60π**
- B. **120π**
- C. **600π**
- D. **$2,400\pi$**

Question ID 0d36e672

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 0d36e672

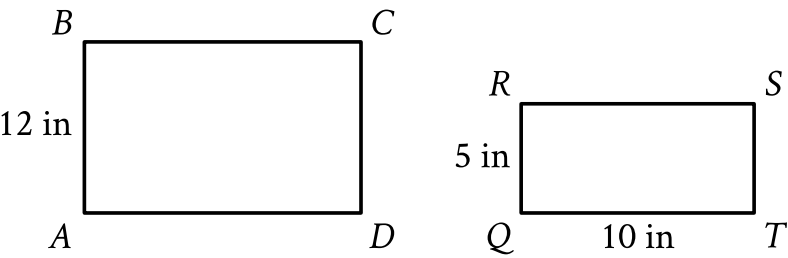
Rectangles $ABCD$ and $EFGH$ are similar. The length of each side of $EFGH$ is **6** times the length of the corresponding side of $ABCD$. The area of $ABCD$ is **54** square units. What is the area, in square units, of $EFGH$?

- A. **9**
- B. **36**
- C. **324**
- D. **1,944**

Question ID 7bea77c0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 7bea77c0



Note: Figure not drawn to scale.

Rectangles $ABCD$ and $QRST$ shown are similar, where A , B , C , and D correspond to Q , R , S , and T , respectively. What is the length, in inches (**in**), of $\overline{AD}$?

- A. 60
- B. 24
- C. 17
- D. 10

Question ID 9af4eee3

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 9af4eee3

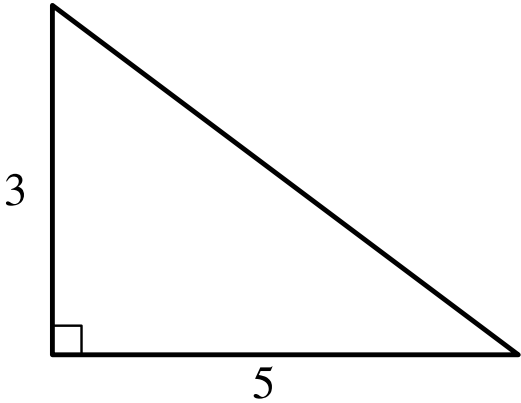
Rectangle $ABCD$ is similar to rectangle $EFGH$. The area of rectangle $ABCD$ is **648** square inches, and the area of rectangle $EFGH$ is **72** square inches. The length of the longest side of rectangle $ABCD$ is **36** inches. What is the length, in inches, of the longest side of rectangle $EFGH$?

- A. **4**
- B. **9**
- C. **12**
- D. **36**

Question ID 9ee4e592

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div></div> <div></div> <div></div>

ID: 9ee4e592



Note: Figure not drawn to scale.

The figure shows the lengths, in inches, of two sides of a right triangle. What is the area of the triangle, in square inches?

Question ID 02811722

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 02811722

A right rectangular prism has a length of **28 centimeters (cm)**, a width of **15 cm**, and a height of **16 cm**. What is the surface area, **in cm²**, of the right rectangular prism?

Question ID 090d4df6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 090d4df6

Square A has side lengths that are **166** times the side lengths of square B. The area of square A is ***k*** times the area of square B. What is the value of ***k***?

Question ID b6a9bc22

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: b6a9bc22

Square A has side lengths that are **246** times the side lengths of square B. The area of square A is ***k*** times the area of square B. What is the value of ***k***?

- A. **60,516**
- B. **492**
- C. **246**
- D. **123**

Question ID bfe225c0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: bfe225c0

Parallelogram $ABCD$ is similar to parallelogram $PQRS$. The length of each side of parallelogram $PQRS$ is **2** times the length of its corresponding side of parallelogram $ABCD$. The area of parallelogram $ABCD$ is **5** square centimeters. What is the area, in square centimeters, of parallelogram $PQRS$?

- A. **7**
- B. **10**
- C. **20**
- D. **25**

Question ID c9fee8a2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

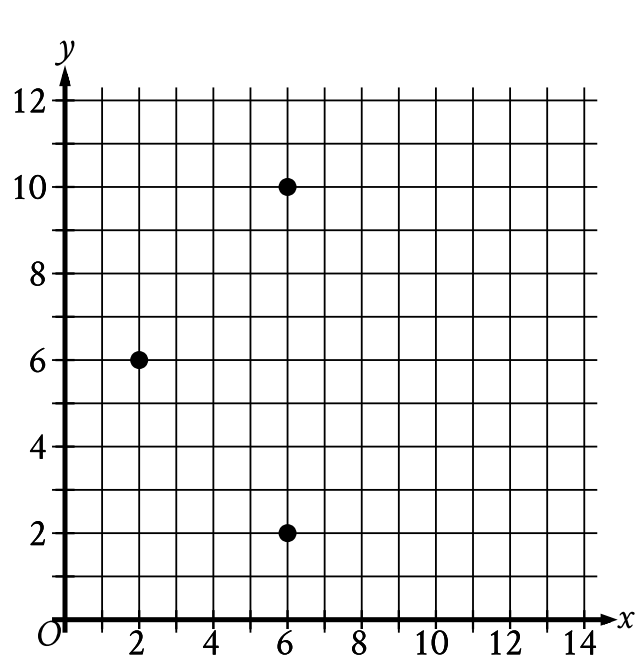
ID: c9fee8a2

A cube has a volume of **474,552** cubic units. What is the surface area, in square units, of the cube?

Question ID fac3be15

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div></div> <div></div> <div></div>

ID: fac3be15



The three points shown define a circle. The circumference of this circle is $k\pi$, where k is a constant. What is the value of k ?

Question ID 14be12ff

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 14be12ff

A hemisphere is half of a sphere. If a hemisphere has a radius of **27** inches, which of the following is closest to the volume, in cubic inches, of this hemisphere?

- A. **1,500**
- B. **6,100**
- C. **30,900**
- D. **41,200**

Question ID 71ed94a7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 71ed94a7

A circle has a radius of **2.1** inches. The area of the circle is **$b\pi$** square inches, where **b** is a constant. What is the value of **b** ?

Question ID 5d57a9d5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 5d57a9d5

A right circular cone has a height of **22 centimeters (cm)** and a base with a diameter of **6 cm**. The volume of this cone is **$n\pi \text{ cm}^3$** . What is the value of **n** ?

Question ID 2476696b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 2476696b

A triangular prism has a height of **8 centimeters (cm)** and a volume of **216 cm³**. What is the area, **in cm²**, of the base of the prism? (The volume of a triangular prism is equal to ***Bh***, where ***B*** is the area of the base and ***h*** is the height of the prism.)

Question ID 8ea086cc

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 8ea086cc

A right square prism has a height of **14** units. The volume of the prism is **2,016** cubic units. What is the length, in units, of an edge of the base?

Question ID 129bc31d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 129bc31d

The length of each side of a square is **94** centimeters (cm). Which expression gives the area, in **cm²**, of the square?

- A. **2 · 94**
- B. **2 · 94 · 94**
- C. **4 · 94**
- D. **94 · 94**

Question ID 6b1df07d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 6b1df07d

The length of the edge of the base of a right square prism is **6** units. The volume of the prism is **2,880** cubic units. What is the height, in units, of the prism?

- A. $4\sqrt{30}$

B. **36**

C. $24\sqrt{5}$

D. 80

Question ID ddcae495

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: ddcae495

The table gives the perimeters of similar triangles TUV and XYZ , where $\overline{TU}$ corresponds to $\overline{XY}$. The length of $\overline{TU}$ is 18.

	Perimeter
Triangle TUV	37
Triangle XYZ	333

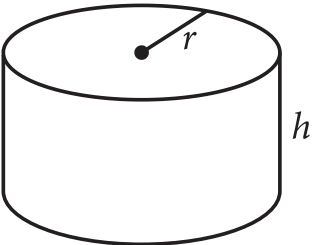
What is the length of $\overline{XY}$?

- A. 2
- B. 18
- C. 55
- D. 162

Question ID 03945175

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 03945175



The figure shown is a right circular cylinder with a radius of r and height of h . A second right circular cylinder (not shown) has a volume that is **392** times as large as the volume of the cylinder shown. Which of the following could represent the radius R , in terms of r , and the height H , in terms of h , of the second cylinder?

- A. $R = 8r$ and $H = 7h$
- B. $R = 8r$ and $H = 49h$
- C. $R = 7r$ and $H = 8h$
- D. $R = 49r$ and $H = 8h$

Question ID 470c3f70

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 470c3f70

A cube has an edge length of **41** inches. What is the volume, in cubic inches, of the cube?

- A. **164**
- B. **1,681**
- C. **10,086**
- D. **68,921**

Question ID ec78b38e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: ec78b38e

A cube has an edge length of **68** inches. A solid sphere with a radius of **34** inches is inside the cube, such that the sphere touches the center of each face of the cube. To the nearest cubic inch, what is the volume of the space in the cube not taken up by the sphere?

- A. **149,796**
- B. **164,500**
- C. **190,955**
- D. **310,800**

Question ID d5620692

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: d5620692

Triangles ABC and DEF are similar. Each side length of triangle ABC is 4 times the corresponding side length of triangle DEF . The area of triangle ABC is 270 square inches. What is the area, in square inches, of triangle DEF ?

Question ID 80a8c7f7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 80a8c7f7

Square X has a side length of **12** centimeters. The perimeter of square Y is **2** times the perimeter of square X. What is the length, in centimeters, of one side of square Y?

- A. **6**
- B. **10**
- C. **14**
- D. **24**

Question ID beaa3b50

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: beaa3b50

A circle has a circumference of 31π centimeters. What is the diameter, in centimeters, of the circle?

Question ID 2d4c71c6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 2d4c71c6

Right rectangular prism X is similar to right rectangular prism Y. The surface area of right rectangular prism X is **58 square centimeters (cm^2)**, and the surface area of right rectangular prism Y is **1,450 cm^2** . The volume of right rectangular prism Y is **1,250 cubic centimeters (cm^3)**. What is the sum of the volumes, **in cm^3** , of right rectangular prism X and right rectangular prism Y?

Question ID 799f5245

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 799f5245

A right triangle has sides of length $2\sqrt{2}$, $6\sqrt{2}$, and $\sqrt{80}$ units. What is the area of the triangle, in square units?

- A. $8\sqrt{2} + \sqrt{80}$
- B. 12
- C. $24\sqrt{80}$
- D. 24