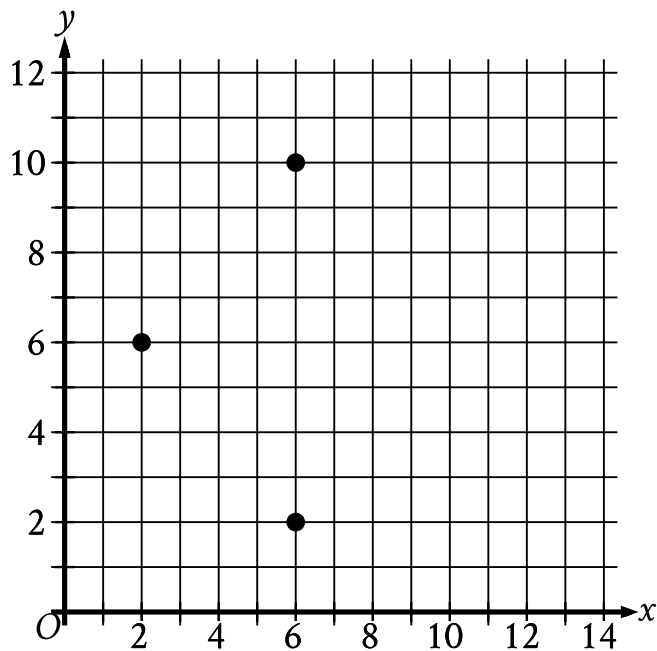


Question ID 6692f86d

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 6692f86d



◀ ▶

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 5a4c2576

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 5a4c2576

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 9eeacc73

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 9eeacc73

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 cm<sup>2</sup>**, of the right rectangular prism?

# Question ID 77b4f5c9

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 77b4f5c9

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

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

# Question ID 559068d5

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 559068d5

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 012489f9

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 012489f9

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 c5a51dda

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: c5a51dda

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

# Question ID 429c2a72

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 429c2a72

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

# Question ID 76465540

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 76465540

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 4abd4abf

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 4abd4abf

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 31926070

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 31926070

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 76f470b6

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 76f470b6

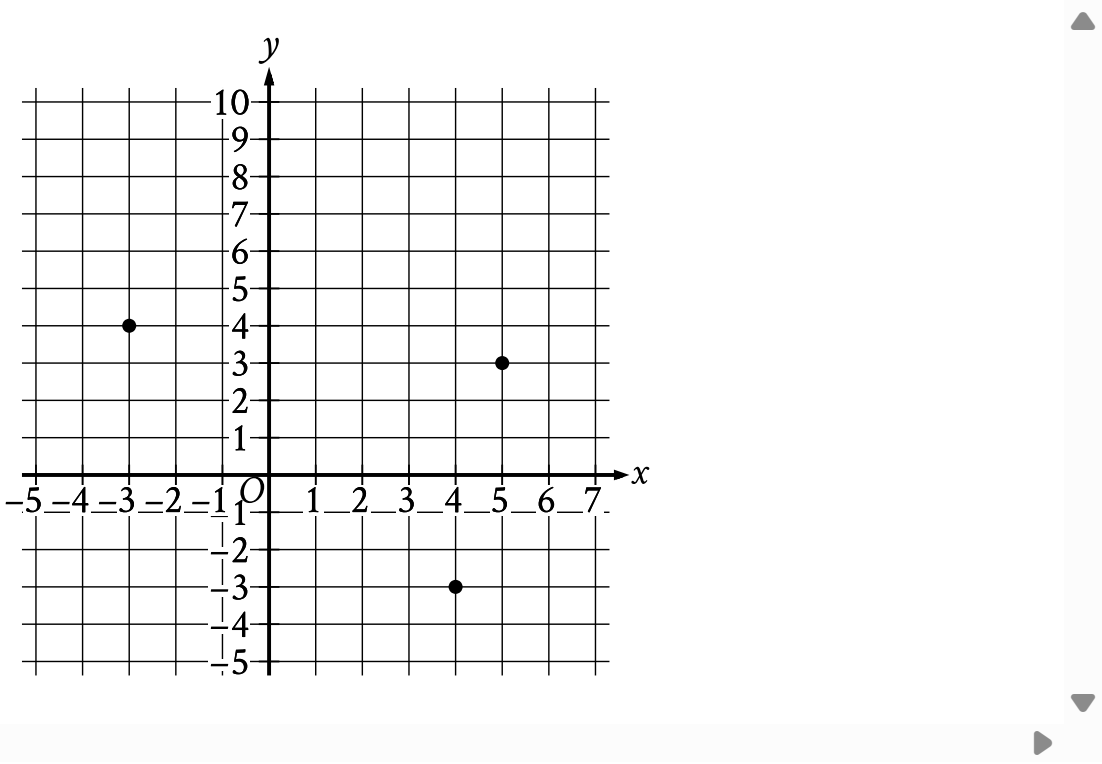
Circle  $A$  has a radius of  $3n$  and circle  $B$  has a radius of  $129n$ , where  $n$  is a positive constant. The area of circle  $B$  is how many times the area of circle  $A$ ?

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

Question ID 530b2e84

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 530b2e84



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

Question ID 02545fec

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 02545fec

A cube has an edge length of ~~6~~**8** inches. A solid sphere with a radius of ~~3~~**4** 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. ~~14~~**9,796**
- B. ~~16~~**4,500**
- C. ~~19~~**0,955**
- D. ~~31~~**0,800**

Question ID e901bf6d

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: e901bf6d

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 21f787ad

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 21f787ad

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 2994adbe

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

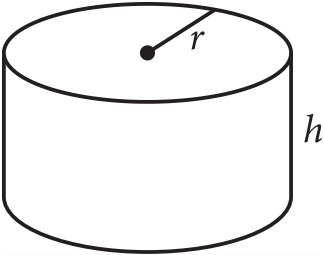
ID: 2994adbe

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 c3d0a7fb

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: c3d0a7fb



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 675148a3

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 675148a3

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 deb47fce

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

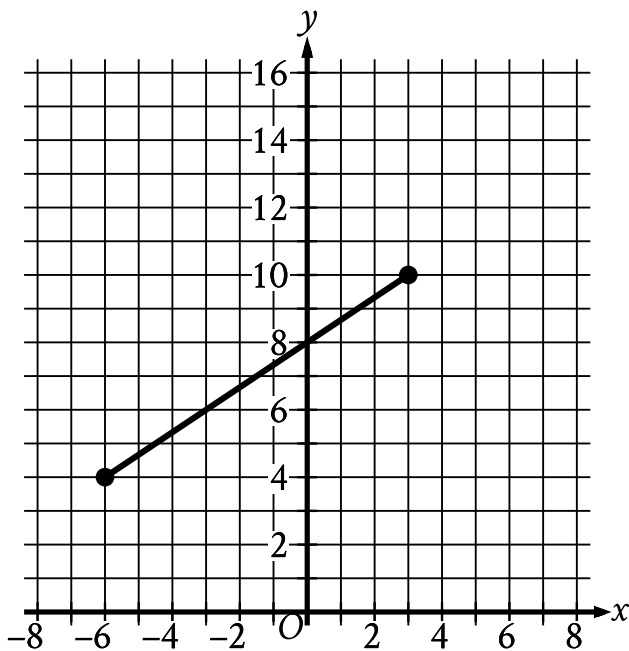
ID: deb47fce

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 220e72c1

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 220e72c1



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 8235af09

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 8235af09

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 9864d5cf

| Assessment | Test | Domain                    | Skill           | Difficulty |
|------------|------|---------------------------|-----------------|------------|
| SAT        | Math | Geometry and Trigonometry | Area and volume | Hard       |

ID: 9864d5cf

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