

Question ID a889e145

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Geometry and Trigonometry	Area and volume	

ID: a889e145

What is the area, in square inches, of a rectangle with a length of **7** inches and a width of **6** inches?

- A. **13**
- B. **20**
- C. **42**
- D. **84**

ID: a889e145 Answer

Correct Answer: C

Rationale

Choice C is correct. The area, A , of a rectangle is given by the formula $A = lw$, where l represents the length of the rectangle and w represents its width. It's given that the rectangle has a length of 7 inches and a width of 6 inches. Substituting 7 for l and 6 for w in the formula $A = lw$ yields $A = 76$, or $A = 42$. Thus, the area, in square inches, of the rectangle is 42.

Choice A is incorrect. This is the sum, not the product, of the length and width of the rectangle.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect. This is twice the area, in square inches, of the rectangle.

Question Difficulty: Easy

Question ID 45f4c00c

Assessment	Test	Domain	Skill	Difficulty
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ID: 45f4c00c

What is the area, in square centimeters, of a rectangle with a length of **36** centimeters and a width of **34** centimeters?

- A. **70**
- B. **140**
- C. **1,156**
- D. **1,224**

ID: 45f4c00c Answer

Correct Answer: D

Rationale

Choice D is correct. The area A , in square centimeters, of a rectangle can be found using the formula $A = lw$, where l is the length, in centimeters, of the rectangle and w is its width, in centimeters. It's given that the rectangle has a length of 36 centimeters and a width of 34 centimeters. Substituting 36 for l and 34 for w in the formula $A = lw$ yields $A = 3634$, or $A = 1,224$. Therefore, the area, in square centimeters, of this rectangle is 1,224.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice B is incorrect. This is the perimeter, in centimeters, not the area, in square centimeters, of the rectangle.

Choice C is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 02bed84d

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Geometry and Trigonometry	Area and volume	

ID: 02bed84d

A rectangle has a length of **64** inches and a width of **32** inches. What is the area, in square inches, of the rectangle?

ID: 02bed84d Answer

Correct Answer: 2048

Rationale

The correct answer is 2,048. The area A , in square inches, of a rectangle is equal to the product of its length l , in inches, and its width w , in inches, or $A = lw$. It's given that the rectangle has a length of 64 inches and a width of 32 inches. Substituting 64 for l and 32 for w in the equation $A = lw$ yields $A = 6432$, or $A = 2,048$. Therefore, the area, in square inches, of the rectangle is 2,048.

Question Difficulty: Easy

Question ID cd81e894

Assessment	Test	Domain	Skill	Difficulty
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ID: cd81e894

Each side of a square has a length of ~~45~~. What is the perimeter of this square?

ID: cd81e894 Answer

Correct Answer: 180

Rationale

The correct answer is 180. The perimeter of a polygon is equal to the sum of the lengths of the sides of the polygon. It’s given that each side of the square has a length of 45. Since a square is a polygon with 4 sides, the perimeter of this square is $45 + 45 + 45 + 45$, or 180.

Question Difficulty: Easy

Question ID a4c8c496

Assessment	Test	Domain	Skill	Difficulty
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ID: a4c8c496

What is the area of a rectangle with a length of **17 centimeters (cm)** and a width of **7 cm**?

- A. **24 cm²**
- B. **48 cm²**
- C. **119 cm²**
- D. **576 cm²**

ID: a4c8c496 Answer

Correct Answer: C

Rationale

Choice C is correct. The area of a rectangle with length l and width w can be found using the formula $A = lw$. It's given that the rectangle has a length of 17 cm and a width of 7 cm. Therefore, the area of this rectangle is $A = 177$, or 119 cm².

Choice A is incorrect. This is the sum of the length and width of the rectangle, not the area.

Choice B is incorrect. This is the perimeter of the rectangle, not the area.

Choice D is incorrect. This is the sum of the length and width of the rectangle squared, not the area.

Question Difficulty: Easy

Question ID d8114972

Assessment	Test	Domain	Skill	Difficulty
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ID: d8114972

The perimeter of triangle ABC is **17** inches, the length of side AB is **4** inches, and the length of side AC is **7** inches. What is the length, in inches, of side BC ?

- A. **4**
- B. **6**
- C. **7**
- D. **11**

ID: d8114972 Answer

Correct Answer: B

Rationale

Choice B is correct. The perimeter of a triangle is the sum of the lengths of all three sides of the triangle. It's given that the lengths of side AB and side AC are 4 inches and 7 inches, respectively. Let x represent the length, in inches, of side BC . The sum of the lengths, in inches, of all three sides of triangle ABC can be represented by the expression $4 + 7 + x$. Since it's given that the perimeter of triangle ABC is 17 inches, it follows that $17 = 4 + 7 + x$, or $17 = 11 + x$. Subtracting 11 from both sides of this equation yields $6 = x$. Therefore, the length, in inches, of side BC is 6.

Choice A is incorrect. This is the length, in inches, of side AB .

Choice C is incorrect. This is the length, in inches, of side AC .

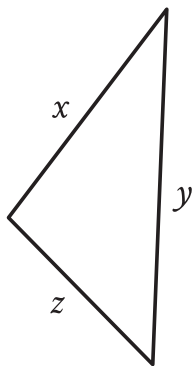
Choice D is incorrect. This is the sum of the lengths, in inches, of sides AB and AC .

Question Difficulty: Easy

Question ID 5d1eb251

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ID: 5d1eb251



Note: Figure not drawn to scale.

The triangle shown has a perimeter of **22** units. If $x = 9$ units and $y = 7$ units, what is the value of z , in units?

- A. **6**
- B. **7**
- C. **9**
- D. **16**

ID: 5d1eb251 Answer

Correct Answer: A

Rationale

Choice A is correct. The perimeter of a triangle is the sum of the lengths of its three sides. The triangle shown has side lengths x , y , and z . It's given that the triangle has a perimeter of 22 units. Therefore, $x + y + z = 22$. If $x = 9$ units and $y = 7$ units, the value of z , in units, can be found by substituting 9 for x and 7 for y in the equation $x + y + z = 22$, which yields $9 + 7 + z = 22$, or $16 + z = 22$. Subtracting 16 from both sides of this equation yields $z = 6$. Therefore, if $x = 9$ units and $y = 7$ units, the value of z , in units, is 6.

Choice B is incorrect. This is the value of y , in units, not the value of z , in units.

Choice C is incorrect. This is the value of x , in units, not the value of z , in units.

Choice D is incorrect. This is the value of $x + y$, in units, not the value of z , in units.

Question Difficulty: Easy

Question ID dbb36b07

Assessment	Test	Domain	Skill	Difficulty
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ID: dbb36b07

What is the perimeter, in inches, of a rectangle with a length of **4** inches and a width of **9** inches?

- A. **13**
- B. **17**
- C. **22**
- D. **26**

ID: dbb36b07 Answer

Correct Answer: D

Rationale

Choice D is correct. The perimeter of a figure is equal to the sum of the measurements of the sides of the figure. It’s given that the rectangle has a length of 4 inches and a width of 9 inches. Since a rectangle has 4 sides, of which opposite sides are parallel and equal, it follows that the rectangle has two sides with a length of 4 inches and two sides with a width of 9 inches. Therefore, the perimeter of this rectangle is $4 + 4 + 9 + 9$, or 26 inches.

Choice A is incorrect. This is the sum, in inches, of the length and the width of the rectangle.

Choice B is incorrect. This is the sum, in inches, of the two lengths and the width of the rectangle.

Choice C is incorrect. This is the sum, in inches, of the length and the two widths of the rectangle.

Question Difficulty: Easy

Question ID 4f536598

Assessment	Test	Domain	Skill	Difficulty
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ID: 4f536598

What is the area of a rectangle with a length of **4 centimeters (cm)** and a width of **2 cm**?

- A. **6 cm²**
- B. **8 cm²**
- C. **12 cm²**
- D. **36 cm²**

ID: 4f536598 Answer

Correct Answer: B

Rationale

Choice B is correct. The area of a rectangle with length l and width w can be found using the formula $A = lw$. It's given that the rectangle has a length of 4 cm and a width of 2 cm. Therefore, the area of this rectangle is 4 cm (2 cm), or 8 cm².

Choice A is incorrect. This is the sum, in cm, of the length and width of the rectangle, not the area, in cm².

Choice C is incorrect. This is the perimeter, in cm, of the rectangle, not the area, in cm².

Choice D is incorrect. This is the sum of the length and width of the rectangle squared, not the area.

Question Difficulty: Easy

Question ID ac0a4d27

Assessment	Test	Domain	Skill	Difficulty
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ID: ac0a4d27

A rectangle has a length of **13** and a width of **6**. What is the perimeter of the rectangle?

- A. **12**
- B. **26**
- C. **38**
- D. **52**

ID: ac0a4d27 Answer

Correct Answer: C

Rationale

Choice C is correct. The perimeter of a quadrilateral is the sum of the lengths of its four sides. It's given that the rectangle has a length of 13 and a width of 6. It follows that the rectangle has two sides with length 13 and two sides with length 6. Therefore, the perimeter of the rectangle is $13 + 13 + 6 + 6$, or 38.

Choice A is incorrect. This is the sum of the lengths of the two sides with length 6, not the sum of the lengths of all four sides of the rectangle.

Choice B is incorrect. This is the sum of the lengths of the two sides with length 13, not the sum of the lengths of all four sides of the rectangle.

Choice D is incorrect. This is the perimeter of a rectangle that has four sides with length 13, not two sides with length 13 and two sides with length 6.

Question Difficulty: Easy

Question ID a3c7621f

Assessment	Test	Domain	Skill	Difficulty
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ID: a3c7621f

The area of a rectangle is **57** square inches. The length of the longest side of the rectangle is **19** inches. What is the length, in inches, of the shortest side of this rectangle?

ID: a3c7621f Answer

Correct Answer: 3

Rationale

The correct answer is 3. The area of a rectangle can be calculated by multiplying the length of its longest side by the length of its shortest side. It's given that the area of the rectangle is 57 square inches and the length of the longest side of the rectangle is 19 inches. Let x represent the length, in inches, of the shortest side of this rectangle. It follows that $57 = 19x$. Dividing both sides of this equation by 19 yields $3 = x$. Therefore, the length, in inches, of the shortest side of the rectangle is 3.

Question Difficulty: Easy

Question ID 176eea04

Assessment	Test	Domain	Skill	Difficulty
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ID: 176eea04

The area of a square is ~~64~~ square inches. What is the side length, in inches, of this square?

- A. 8
- B. 16
- C. 64
- D. 128

ID: 176eea04 Answer

Correct Answer: A

Rationale

Choice A is correct. It's given that the area of a square is 64 square inches. The area A , in square inches, of a square is given by the formula $A = s^2$, where s is the side length, in inches, of the square. Substituting 64 for A in this formula yields $64 = s^2$. Taking the positive square root of both sides of this equation yields $8 = s$. Thus, the side length, in inches, of this square is 8.

Choice B is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect. This is the area, in square inches, of the square, not the side length, in inches, of the square.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID 5e651b6d

Assessment	Test	Domain	Skill	Difficulty
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ID: 5e651b6d

The area of a rectangle is **630** square inches. The length of the rectangle is **70** inches. What is the width, in inches, of this rectangle?

- A. **9**
- B. **70**
- C. **315**
- D. **560**

ID: 5e651b6d Answer

Correct Answer: A

Rationale

Choice A is correct. The area A , in square inches, of a rectangle is the product of its length l , in inches, and its width w , in inches; thus, $A = lw$. It's given that the area of a rectangle is 630 square inches and the length of the rectangle is 70 inches. Substituting 630 for A and 70 for l in the equation $A = lw$ yields $630 = 70w$. Dividing both sides of this equation by 70 yields $9 = w$. Therefore, the width, in inches, of this rectangle is 9.

Choice B is incorrect. This is the length, not the width, in inches, of the rectangle.

Choice C is incorrect. This is half the area, in square inches, not the width, in inches, of the rectangle.

Choice D is incorrect. This is the difference between the area, in square inches, and the length, in inches, of the rectangle, not the width, in inches, of the rectangle.

Question Difficulty: Easy