Question ID 4092b887

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: 4092b887

The lengths of two sides of a triangle are 4 centimeters and 6 centimeters. If the perimeter of the triangle is 18 centimeters, what is the length, in centimeters, of the third side of this triangle?

A. 2

B. 8

C. 10

D. 24

ID: 4092b887 Answer

Correct Answer: B

Rationale

Choice B is correct. The perimeter of a triangle is the sum of the lengths of all three of its sides. It's given that the lengths of two sides of a triangle are 4 centimeters and 6 centimeters. Let x represent the length, in centimeters, of the third side of this triangle. The sum of the lengths, in centimeters, of all three sides of the triangle can be represented by the expression $4 + 6 + x$. Since it's given that the perimeter of the triangle is 18 centimeters, it follows that $4 + 6 + x = 18$, or $10 + x = 18$. Subtracting 10 from both sides of this equation yields $x = 8$. Therefore, the length, in centimeters, of the third side of this triangle is 8.

Choice A is incorrect. If the length of the third side of this triangle were 2 centimeters, the perimeter, in centimeters, of the triangle would be $4 + 6 + 2$, or 12, not 18.

Choice C is incorrect. If the length of the third side of this triangle were 10 centimeters, the perimeter, in centimeters, of the triangle would be $4 + 6 + 10$, or 20, not 18.

Choice D is incorrect. If the length of the third side of this triangle were 24 centimeters, the perimeter, in centimeters, of the triangle would be $4 + 6 + 24$, or 34, not 18.

Question Difficulty: Easy

Question ID 2a793441

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: 2a793441

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: 2a793441 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 c3b8c012

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: c3b8c012

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

A. $24\ \text{cm}^2$

B. $48\ \text{cm}^2$

C. $119\ \text{cm}^2$

D. $576\ \text{cm}^2$

ID: c3b8c012 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 $A = 17(7)$, or $119\ \text{cm}^2$.

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 cd9dfca3

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: cd9dfca3

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: cd9dfca3 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 1e530d7a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: 1e530d7a

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

A. $6\ \text{cm}^2$

B. $8\ \text{cm}^2$

C. $12\ \text{cm}^2$

D. $36\ \text{cm}^2$

ID: 1e530d7a 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 $A = \ell w$. 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 $(4\ \text{cm})(2\ \text{cm})$, or $8\ \text{cm}^2$.

Choice A is incorrect. This is the sum, in cm, of the length and width of the rectangle, not the area, in cm^2.

Choice C is incorrect. This is the perimeter, in cm, of the rectangle, not the area, in cm^2.

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 a34cc46f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Geometry and Trigonometry	Area and volume	Easy

ID: a34cc46f

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: a34cc46f Answer

Correct Answer: C

Rationale

Choice C is correct. The area, A, of a rectangle is given by the formula $A = \ell w$, 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 $A = \ell w$ yields $A = (7)(6)$, 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