

Area and Perimeter Problems for Geometry

Name _____

Date _____

Class/Grade _____

- 1** The diagonals of a rhombus measure 6 meters and 8 meters. How many meters are in the perimeter of the rhombus?

+	0	0	0	0	0	0	0	0
-	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 2** The area of a trapezoid is 42 square meters, and the lengths of the bases are 6 meters and 8 meters. What is the measure, in meters, of the altitude of the trapezoid?

+	0	0	0	0	0	0	0	0
-	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 3** The measure of the length of a rectangle is three times the measure of the width, and the perimeter is 32 centimeters. What is the area of the rectangle in square centimeters?

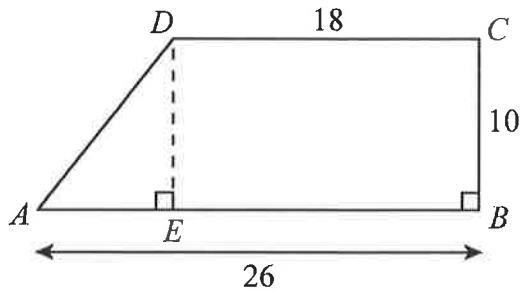
+	0	0	0	0	0	0	0	0
-	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 4** The length of a diagonal of a square is 8 millimeters. What is the area of the square?

- (A) 16 mm^2
- (B) 24 mm^2
- (C) 8 mm^2
- (D) 32 mm^2

Area and Perimeter Problems for Geometry

- 5 In the accompanying diagram of trapezoid $ABCD$, $AB = 26$ meters, $BC = 10$ meters, $CD = 18$ meters, $\overline{CB} \perp \overline{AB}$, and altitude \overline{DE} is drawn.



What is the area of the trapezoid?

- (A) 228 m^2
(B) 220 m^2
(C) 440 m^2
(D) 180 m^2
- 6 What is the perimeter of a square whose area is 64 square kilometers?
- (A) 16 km
(B) 64 km
(C) 256 km
(D) 32 km

- 7 On a scale drawing of a new school playground, a triangular area has sides with lengths of 8 centimeters, 15 centimeters, and 17 centimeters. If the triangular area located on the playground has a perimeter of 120 meters, what is the length of its longest side?

- (A) 45 m
(B) 24 m
(C) 40 m
(D) 51 m

- 8 The perimeter of a parallelogram is 32 meters and the two shorter sides each measure 4 meters. What is the length, in meters, of each of the longer sides?

- (A) 24
(B) 14
(C) 12
(D) 28

- 9 A rectangle has a diagonal of length 10 units and one side of length 6 units. What is the perimeter of the rectangle?

- (A) 48 units
(B) 21 units
(C) 28 units
(D) 14 units

Area and Perimeter Problems for Geometry

- 10** If the lengths, in inches, of two consecutive sides of a rhombus are represented by $3x - 6$ and $x + 14$, then the perimeter of the rhombus is —

- (A) 10 in.
- (B) 24 in.
- (C) 72 in.
- (D) 96 in.

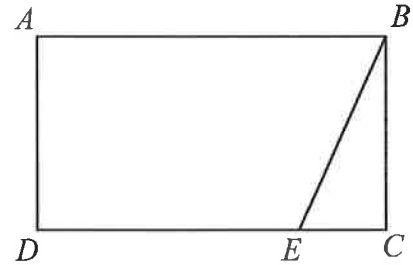
- 11** If the length of a rectangle is $5\sqrt{2}$ yards, and the width is $2\sqrt{3}$ yards, what is the area of the rectangle?

- (A) $7\sqrt{6}$ square yards
- (B) $7\sqrt{5}$ square yards
- (C) $10\sqrt{6}$ square yards
- (D) $10\sqrt{5}$ square yards

- 12** The area of a square is 81 square units. What is the perimeter in units?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

- 13** In the accompanying diagram, $ABCD$ is a rectangle with E a point on \overline{DC} . $EC = 5$ feet, $BE = 13$ feet, and $AB = 20$ feet.

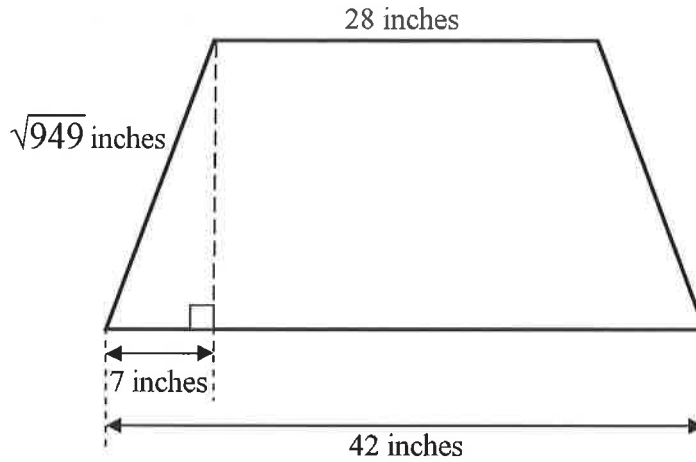


What is the area of trapezoid $ABED$ in square feet?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Area and Perimeter Problems for Geometry

- 14** Carolina is attempting to make a skirt. The pattern for the skirt calls for a piece of fabric with the specifications shown below.



How many square inches of fabric does Carolina need to make the skirt?

- (A) 1,008 square inches
- (B) 1,050 square inches
- (C) 525 square inches
- (D) 928 square inches

- 15** Which figure has the largest area?

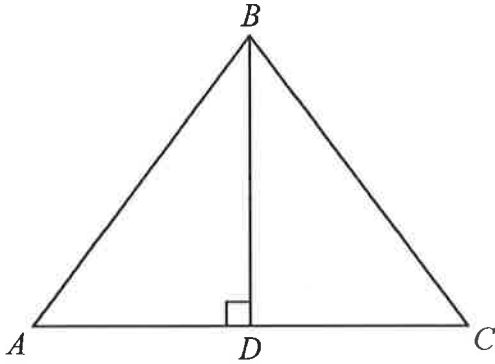
- (A) A triangle with base and height each measuring 6 centimeters
- (B) An equilateral triangle with side measuring 6 centimeters
- (C) A circle with diameter measuring 6 centimeters
- (D) A square with side measuring 6 centimeters

- 16** What is the perimeter, in meters, of a rhombus with diagonals that measure 12 meters and 16 meters?

+	0	0	0	0	0	0	0
-	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Area and Perimeter Problems for Geometry

- 17** In the accompanying diagram of isosceles triangle ABC , $\overline{BA} \cong \overline{BC}$, and altitude \overline{BD} is drawn.



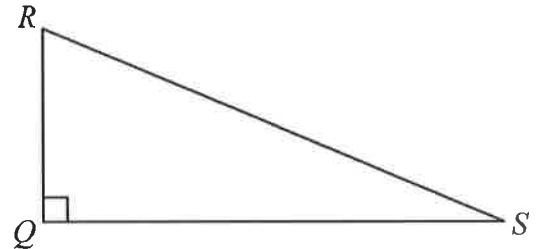
If $BD = 4$ inches and $AD = 3$ inches, what is the perimeter of $\triangle ABC$ in inches?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

- 18** In equilateral triangle ABC , $AB = 3x$ and $BC = 2x + 12$. What is the numerical value of the perimeter of $\triangle ABC$?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

- 19** In right triangle QRS , $m\angle Q = 90^\circ$, $RS = 13$ units, and $RQ = 5$ units.



What is the area of $\triangle QRS$ in square units?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
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	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Area and Perimeter Problems for Geometry

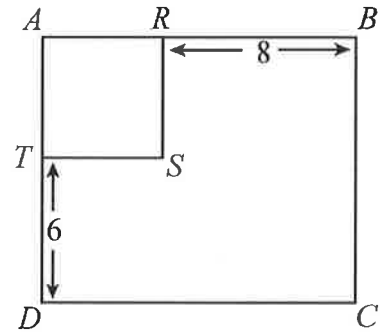
- 20** In a rectangle, the length is twice the width, and the perimeter is 48 units. What is the area of the rectangle in square units?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

- 21** What is the area, in square centimeters, of a right triangle with legs of lengths 6 centimeters and 8 centimeters?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

- 22** Rectangle $ABCD$ and square $ARST$ are shown below. The area of the rectangle is 143 units^2 .

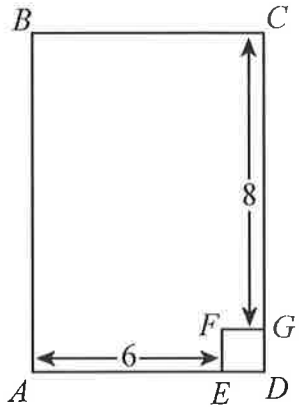


If $RB = 8$ units, and $TD = 6$ units, what is the length, in units, of \overline{AT} , a side of square $ARST$?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Area and Perimeter Problems for Geometry

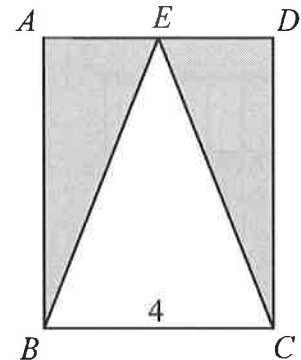
- 23** In the accompanying diagram, $ABCD$ is a rectangle and $DEFG$ is a square. The area of $ABCD$ is 80 units^2 , $CG = 8 \text{ units}$, and $AE = 6 \text{ units}$.



What is the length, in units, of side \overline{EF} ?

+	0	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 24** In the accompanying diagram, triangle BCE is inscribed in rectangle $ABCD$.



If the length of side \overline{BC} is 4 centimeters, what is the area in square centimeters of the shaded portion of the diagram?

+	0	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

Area and Perimeter Problems for Geometry

- 25 The perimeter of $\triangle ABC$ is 36 units. If $\angle A \cong \angle B$, $AC = x$ units, and $AB = (x + 3)$ units, what is the value of x ?

+	□	□	□	□	□	□	□
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

