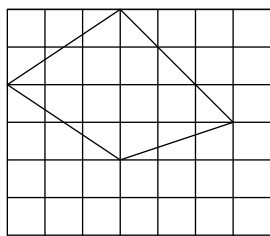


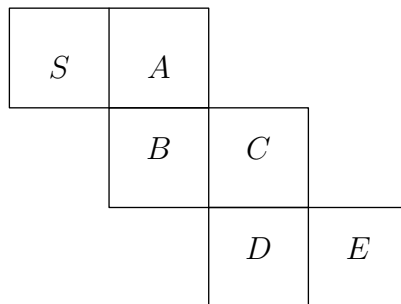
Geometry Worksheet 3A1

- (1) _____ What is the ratio of the number of degrees in the complement of a 60-degree angle to the number of degrees in the supplement of a 60-degree angle? Express your answer as a common fraction.
- (2) _____ Brandon has an 8-inch square pan. Barbara has a 9-inch square pan. Both pans have the same volume. What is the ratio of the height of Barbara's pan to the height of Brandon's pan? Express your answer as a common fraction.
- (3) _____ What is the area, in square centimeters, of the figure shown?



□ = 1 sq. cm.

- (4) _____ When this net of six squares is folded to make a cube, which face will be opposite face S ?



- (5) _____ Two cubes have edge lengths of 6 inches and 12 inches. What is the ratio of the surface area of the smaller cube to the surface area of the larger cube? Express your answer as a common fraction.

(6) _____ The area of a circular plate is 200π cm². What is the number of centimeters in the radius of the plate? Express your answer in simplest radical form.

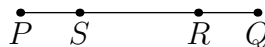
(7) _____ The perimeter of a rectangle is 48 units, and its length is twice its width. What is the number of square units in the area of the rectangle?

(8) _____ A circular spinner to be used in a game is divided by radii into 5 wedge-shaped pieces such that 4 pieces have equal area and the area of the remaining piece is twice the area of any one of the other pieces. How many degrees are in the central angle of the largest piece?

(9) _____ A figure skater is facing north when she begins to spin to her right. She spins 2250 degrees. Which direction (north, south, east or west) is she facing when she finishes her spin?

(10) _____ A cube has a surface area of 900cm². What is the number of cubic centimeters in the volume of the cube? Express your answer in simplest radical form.

(11) _____ In the diagram shown, $PS = \frac{1}{3}PR$, $PR = \frac{3}{4}PQ$, and $PQ = 40$ cm. What is the number of centimeters in the length of \overline{SQ} ?

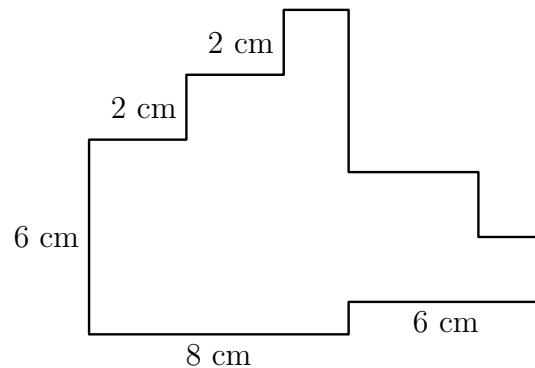


(12) _____ A telephone pole is supported by a steel cable which extends from the top of the pole to a point on the ground 3 meters from its base. When Leah walks 2.5 meters from the base of the pole toward the point where the cable is attached to the ground, her head just touches the cable. Leah is 1.5 meters tall. How many meters tall is the pole?

(13) _____ A 10 unit by 10 unit square is disassembled into unit squares. Two separate squares are then built using all of these unit squares. What is the edge length of the smaller of these two squares?

- (14) _____ It takes 125 identical wooden cubes to fill a cubical box. How many of these cubes does it take to cover the bottom of the box?
- (15) _____ A cube has a volume of 343 cubic cm. What is the number of square centimeters in the surface area of the cube?
- (16) _____ What is the sum of the number of faces, edges and vertices of a cube?
- (17) _____ How many different isosceles triangles have integer side lengths and perimeter of 81 units?
- (18) _____ Congruent equilateral triangles are used to tessellate the plane. How many triangles share a common vertex?
- (19) _____ A triangle is formed with sticks of length 8, 15 and 17 inches. Pieces of the same integer length are cut from each stick so that the three remaining pieces can no longer form a triangle. What is the least number of inches that could have been removed from each stick?
- (20) _____ The rectangular stage at Radio City Music Hall in New York City measures 144 feet wide and 60 feet deep. What is the number of square yards in its area?
- (21) _____ A water tank in the shape of a right circular cylinder has a base radius of 30 meters and a volume of 2700π cubic meters. What is the number of meters in the height of the tank?
- (22) _____ The surface area of a particular cube is 384 square centimeters. In cubic centimeters, what is the volume of the cube?
- (23) _____ How many centimeters are in the length of the longest side of a rectangle whose area is 108 square centimeters and whose perimeter is 42 centimeters?

- (24) _____ A rectangle's width is 3 units, its length is $(2x + 2)$ units and it has area 48 square units. What is the value of x ?
- (25) _____ One stamp is randomly selected from a 10-by-10 sheet of 100 stamps. What is the probability that the stamp selected is not along an outer edge? Express your answer as a common fraction.
- (26) _____ If adjacent sides meet at right angles in the figure below, what is the number of centimeters in the perimeter of the figure?



- (27) _____ The perimeter of a square lot is lined with trees, and there are three yards between the centers of adjacent trees. There are eight trees on a side, and a tree is at each corner. What is the number of yards in the perimeter of the lot?
- (28) _____ Each side of hexagon $ABCDEF$ has a length of at least 5 cm and $AB = 7$ cm. How many centimeters are in the least possible perimeter of hexagon $ABCDEF$?