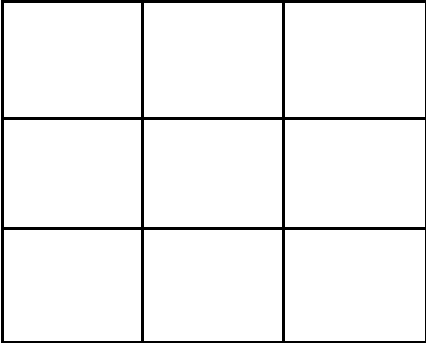




# Geometry 7th/8th

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|----|---|
| 1  | I have a triangle ABC, angle A is $2X$ degrees, angle B is $3X$ degrees, and angle C is $4X$ degrees. What is the sum of the angles B and C in degrees?   |
| 2  | I have a right triangle with legs of length 7 and $6x$ and a hypotenuse of length 25. What is $x^3$ ?   |
| 3  | How many rectangles are in this 3 by 3 square? (Figure not drawn to scale)<br>   |
| 4  | In a square ABCD of side length 6, we have an isosceles triangle AEF with vertices E, F on the sides of ABCD. What is the maximum possible area of triangle AEF?  |
| 5  | I have a regular cone-shaped cup with a diameter of 6 and a height of 4. I have another cup in the shape of a cylinder whose volume and height is equal to the volume of the cone-shaped cup. What is the cylinder's surface area?      |
| 6  | A square ABCD has side length of 12, and a quadrilateral is formed with the midpoints of the sides as vertices. What is the largest side length of this new quadrilateral?  |
| 7  | Let ABC be a triangle. Let D be the midpoint of side BC and let E be the perpendicular from B. If angle CAD equals angle CBE = $20^\circ$ , what is the measure of angle BAC?   |
| 8  | Dawn the Dog is constrained within a square lawn of area $27 \text{ m}^2$ . He is on a leash that is 6 meters long that is attached to the corner of the lawn. What is the area of the portion of the lawn that can be reached by Dawn? |
| 9  | Let A: (0, 6), B: (6, 2), and C be a point on the x-axis. Find the minimal value of AC+CB.  |
| 10 | Let P be the center of a cube with side length 6, and S be the set of all points that are closer to P than any other vertex of the cube. What is the volume of S?   |