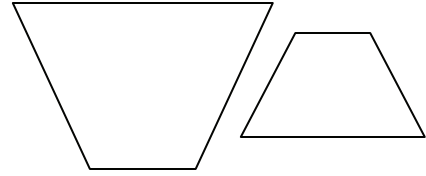


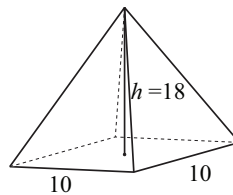
1. \_\_\_\_\_ cm Two trapezoids, shown here, are similar. The ratio of the sum of the bases of the larger trapezoid to the sum of the bases of the smaller trapezoid is 5:4. If the height of the smaller trapezoid is 20 cm, what is the height of the larger trapezoid, in centimeters?



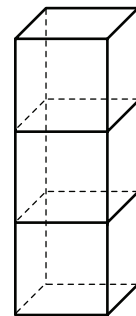
2. \_\_\_\_\_ If  $3x + 2 = 17$ , what is the value of  $x^3$ ?

3. \_\_\_\_\_ The length of segment MC is 6 units with endpoints  $M(x, 3)$  and  $C(-2, 3)$ . What is the value of  $x$  if point M is in the first quadrant?

4. \_\_\_\_\_ % If the height of the square pyramid shown is increased by 50% while the length of each side of the base is decreased by 20%, by what percent does the volume of the pyramid decrease?



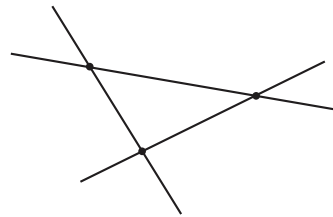
5. \_\_\_\_\_ cm<sup>2</sup> Three cubes, each with a volume of 8 cm<sup>3</sup>, are stacked and glued, as shown. What is the total surface area of the resulting prism?



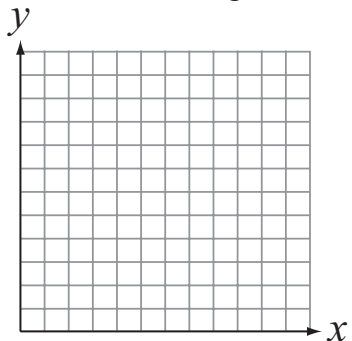
6. \_\_\_\_\_ pkgs Ray is setting up a hot dog stand for the county fair. If hot dogs come in packages of 10, hot dog buns come in packages of 8, and paper plates come in packages of 36, what is the least positive number of packages of hot dogs that Ray can purchase so there will be the same number of hot dogs, buns and plates?

7. \_\_\_\_\_ The mean and median of a set of five distinct positive integers is 5. What is the largest integer that can be in the set?

8. \_\_\_\_\_ points The maximum number of points of intersection determined by three distinct lines in a plane is three. What is the maximum number of points of intersection that are possible with 6 distinct lines?



9. \_\_\_\_\_ (     ,     ) Quadrilateral MNPQ has vertices with coordinates M(2, 5), N(6, 5), P(6, 7) and Q(2, 7). When the figure is rotated clockwise  $270^\circ$  around point M and then reflected across the line  $x = 1$ , what are the coordinates of the final image of point Q? Express your answer as an ordered pair.



10. \_\_\_\_\_ What is the largest value of  $x$  for which  $\sqrt{2x+1} = 2x + 1$ ?