



# Challenge 1

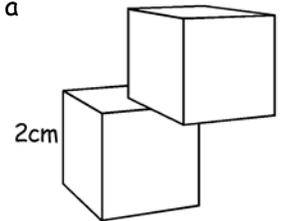
- \_\_\_\_\_ The sum of the 50 smallest positive odd integers is subtracted from the sum of the 50 smallest positive even integers. What is the resulting integer?
- \_\_\_\_\_ What is the combined number of faces, edges, and vertices on a triangular prism?
- \_\_\_\_\_ It takes Seth 35 minutes to finish his math homework and it takes Greg 25 minutes to do the same set of problems. If Seth and Greg work together to finish a total of 36 similar problems in the least possible amount of time, how many more problems would Greg be expected to solve than Seth?

- \$ \_\_\_\_\_ On Monday at Bill's Burger Stand you order fries and a drink for \$2. On Tuesday you order a drink and a burger for \$2.50. On Wednesday you order a burger and fries for \$3. How much would you expect to pay on Thursday for a burger, fries, and a drink?



- \_\_\_\_\_ How many ordered pairs of integers  $(x,y)$  exist such that their sum is 13 more than their product?

- \_\_\_\_\_  $\text{cm}^2$  Identical cubes of edge length 2cm are glued together such that a vertex of one cube is centered on a face of the other cube as shown. How many square centimeters are in the surface area of the resulting geometric solid?



- \_\_\_\_\_  $\text{cm}$  In triangle ABC, the measure of angle B is 60 degrees. If  $AB = 6\text{cm}$  and  $BC = 9\text{cm}$ , what is the length in centimeters of side AC? Express your answer in simplest radical form.

- \_\_\_\_\_ Each of the 32 teams in the NFL plays 16 games in the regular season. What is the greatest possible number of teams that could finish the regular season with identical records of 9 wins and 7 losses?



- \_\_\_\_\_ % James has a large jar full of pennies, dimes, and quarters (no nickels). Exactly 95% of the coins are pennies, but pennies represent only half of the total value of the coins in the jar. What percent of the coins are dimes?
- \_\_\_\_\_ The word FACETIOUS is the most common word in the English language which has each of the five vowels in order from left to right. How many ways can the letters in the word FACETIOUS be arranged such that all five vowels are in order from left to right?