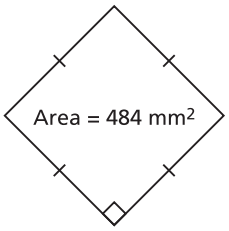
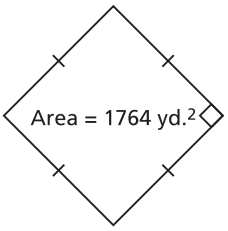
7. Determine the side length of each square.

a)

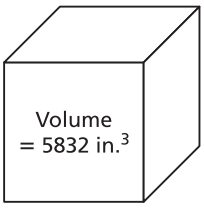


b)

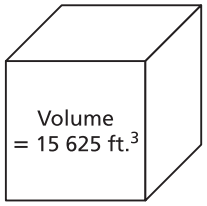


8. Determine the edge length of each cube.

a)



b)



9. In February 2003, the Battlefords Chamber of Commerce in Saskatchewan placed a cage containing a 64-cubic foot ice cube along Yellowhead Highway. Local customers were asked to predict when the ice cube would melt enough for a ball above the ice cube to fall through it. What was the surface area of the cube?

10. A cube has surface area 6534 square feet. What is its volume?

11. Is it possible to construct a cube with 2000 interlocking cubes? Justify your answer.

12. Determine all the perfect square whole numbers and perfect cube whole numbers between each pair of numbers:

a) 315 − 390 **b)** 650 − 750

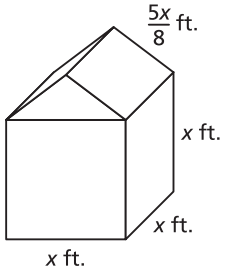
c) 800 − 925 **d)** 1200 − 1350

13. Write 3 numbers that are both perfect squares and perfect cubes.

14. During the Festival du Voyageur in Winnipeg, Manitoba, teams compete in a snow sculpture competition. Each team begins with a 1440-cubic foot rectangular prism of snow. The prism has a square cross-section and height 10 ft. What are its length and width?

C

15. **a)** Write an expression for the surface area of this tent. Do not include the floor.



b) Suppose the surface area of the tent is 90 square feet. Calculate the value of x.

16. Determine the dimensions of a cube for which its surface area is numerically the same as its volume.

17. **a)** Determine the side length of a square with area $121x^4y^2$.

b) Determine the edge length of a cube with volume $64x^6y^3$.

18. Which pairs of perfect cubes have a sum of 1729?

Reflect

How is determining the square root of a number similar to determining its cube root? How are the strategies different?