

Mathematics, Grade 8

17. The formula for the surface area (SA) of a cube is

$$SA = 6e^2, \text{ where } e \text{ is the length of an edge of the cube.}$$

An edge of a red cube is twice as long as an edge of a blue cube. How many times greater is the surface area of the red cube than that of the blue cube?

- A. 2 times greater
- B. 4 times greater
- C. 6 times greater
- D. 12 times greater

*Reporting Category/Substrand for Item 17: **Patterns, Relations, and Functions/Algebra** (p. 143)*

18. Which of the following measurements would **most likely** be given with a **negative** exponent in scientific notation?

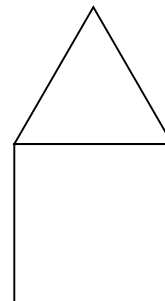
- A. the diameter of a blood cell in centimeters
- B. the distance to the Sun in kilometers
- C. the weight of a pencil in grams
- D. the mass of a rocket in kilograms

*Reporting Category/Substrand for Item 18: **Number Sense/Number and Number Relationships** (p. 141)*

19. In the figure on the right, the perimeter of the equilateral triangle is 24 inches.

What is the **area** of the square?

- A. 32 sq. in.
- B. 64 sq. in.
- C. 476 sq. in.
- D. 12 sq. in.



*Reporting Category/Substrand for Item 19: **Geometry and Measurement/Measurement** (p. 144)*

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20. The Massachusetts Department of Employment and Training predicted that there will be 21% more jobs for computer programmers in Massachusetts in 2005 than there were in 1994. There were 15,970 programming jobs in 1994. Based on the prediction, about how many **new** jobs will be available by 2005?
- A. 350
 - B. 750
 - C. 2,750
 - D. 3,350