

1. Which is an irrational number?

A $\frac{2}{8}$

B 0.28

C $\sqrt{28}$

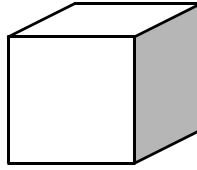
2. The value of $\sqrt{6}$ is between which two integers?

A 2 and 3

B 5 and 7

C 35 and 37

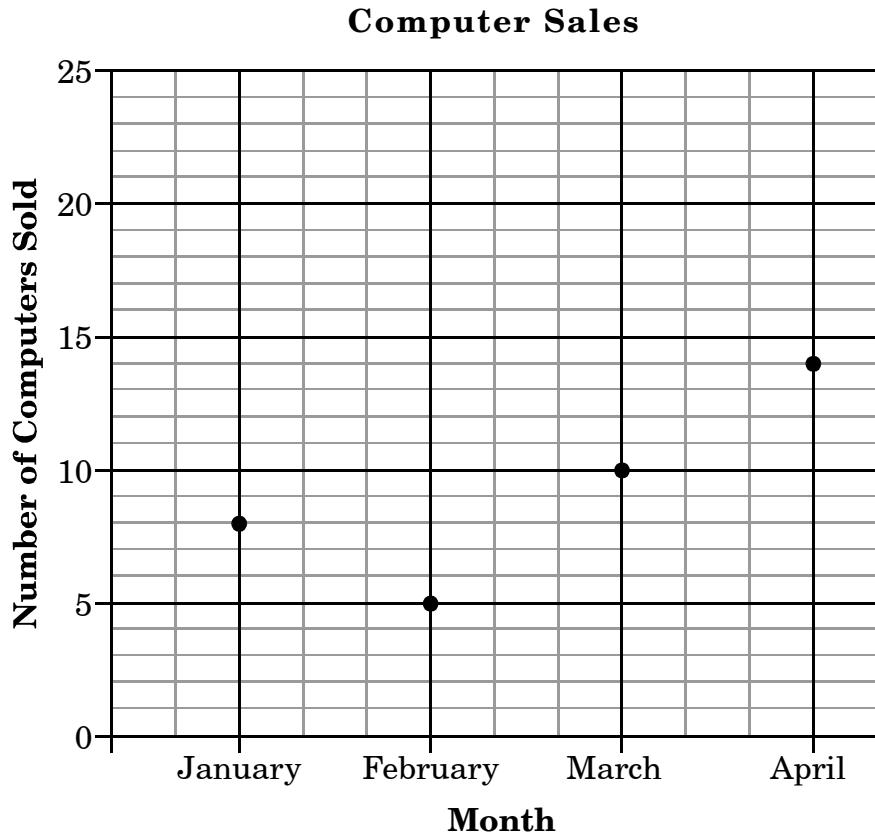
3. Each edge of the cube shown below is 2 inches long.



If each edge length is doubled, what will happen to the volume?

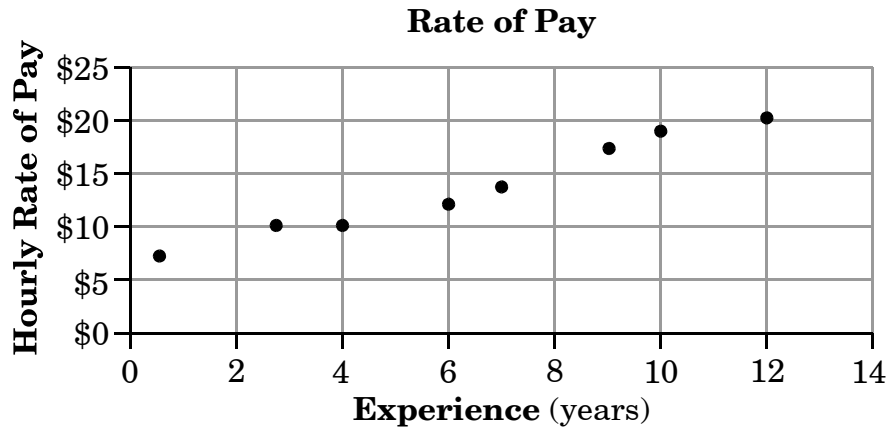
- A The volume will be multiplied by 2.
- B The volume will be multiplied by 4.
- C The volume will be multiplied by 8.
-
4. A point has the coordinates (4, 8). The point will be dilated by a scale factor of 2. What will be the coordinates of the image point?
- A (6, 8)
- B (8, 16)
- C (24, 28)

5. How many more computers were sold in March than in January?



- A 2
- B 3
- C 6

6. The scatterplot below shows the years of experience and the hourly rate of pay for eight workers.



According to the trend shown in the scatterplot, **about** how many years of experience does a worker who earns \$15 an hour have?

- A 4
- B 8
- C 12

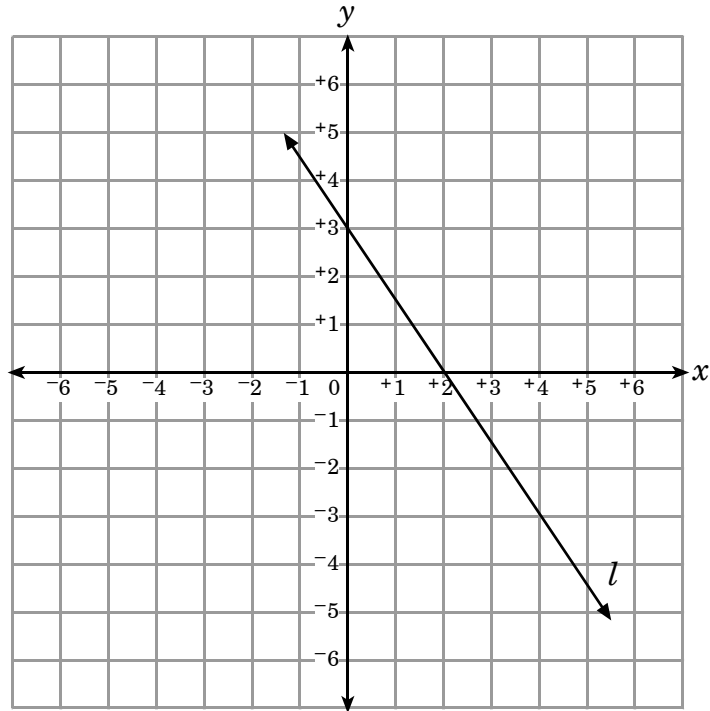
7. Which is a linear function?

A $y = 4$

B $y = 2x^3$

C $y = x^2 - x$

8. What is the slope of line l ?



A -3

B $-\frac{3}{2}$

C -2

9. What is the equation of the line passing through the points (4, 2) and (6, 3)?

A $y = -2x$

B $y = 2x$

C $y = \frac{1}{2}x$

10. What is the value of x when $\frac{2}{3}x = 6$?

A 4

B $5\frac{1}{3}$

C 9

End of Sample Items

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Answers to *NCEXTEND2* Mathematics Grade 8 Sample Items

1. Objective 1.01

Develop number sense for the real numbers. A) Define and use irrational numbers. B) Compare and order. C) Use estimates of irrational numbers in appropriate situations.

Thinking Skill: Organizing **Correct Answer:** C

2. Objective 1.01

Develop number sense for the real numbers. A) Define and use irrational numbers. B) Compare and order. C) Use estimates of irrational numbers in appropriate situations.

Thinking Skill: Organizing **Correct Answer:** A

3. Objective 2.01

Determine the effect on perimeter, area or volume when one or more dimensions of two-and three-dimensional figures are changed.

Thinking Skill: Analyzing **Correct Answer:** C

4. Objective 3.03

Identify, predict, and describe dilations in the coordinate plane.

Thinking Skill: Applying **Correct Answer:** B

5. Objective 4.01

Collect, organize, analyze, and display data (including scatterplots) to solve problems.

Thinking Skill: Organizing **Correct Answer:** A

6. Objective 4.02

Approximate a line of best fit for a given scatterplot; explain the meaning of the line as it relates to the problem and make predictions.

Thinking Skill: Organizing **Correct Answer:** B

7. Objective 5.01

Develop an understanding of function. A) Translate among verbal, tabular, graphic, and algebraic representations of functions. B) Identify relations and functions as linear or nonlinear. C) Find, identify, and interpret the slope (rate of change) and intercepts of a linear function. D) Interpret and compare properties of linear functions from tables, graphs, or equations.

Thinking Skill: Organizing **Correct Answer:** A

8. Objective 5.01

Develop an understanding of function. A) Translate among verbal, tabular, graphic, and algebraic representations of functions. B) Identify relations and functions as linear or nonlinear. C) Find, identify, and interpret the slope (rate of change) and intercepts of a linear function. D) Interpret and compare properties of linear functions from tables, graphs, or equations.

Thinking Skill: Applying **Correct Answer:** B

9. Objective 5.02

Write an equation of a linear relationship given: two points, the slope and one point on the line, or the slope and y-intercept.

Thinking Skill: Analyzing **Correct Answer:** C

10. Objective 5.04

Solve equations using the inverse relationships of addition and subtraction, multiplication and division, squares and square roots, and cubes and cube roots.

Thinking Skill: Applying **Correct Answer:** C