

Question Types

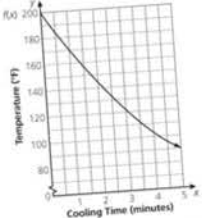
- Multiple-choice items and 2-, 4-, and 6-point constructed-response problems test multiple anchors.
- Module reviews can be used as practice tests.

3 A certain substance decays at an exponential rate. The amount of the substance on any given day is 50% of the amount of the substance the previous day. Which function best models the amount of 1,000 grams of the substance remaining after x days?

A $f(x) = 1,000(0.50^x)$
 B $f(x) = 1,000(0.50^x)$
 C $f(x) = 1,000.50^x$
 D $f(x) = 1,000(1.50^x)$

Read the problem. Write your answers.

4 Beatrice recorded the temperature of a cup of hot water as it cooled during an experiment. The graph below shows the temperature, in degrees Fahrenheit, of the cup of hot water x minutes after cooling.




Write a function that models this situation. Show or explain all steps you used to determine the function.

Module 4
Constructed-Response Review

Read each problem. Write your answers.

1 The area of the triangular sail shown below is 110 square feet.



A Write an equation for the area of the sail.

B Solve the equation you wrote in part A to find all values of x . Show or explain how you determined your answer.

C Explain how you know which value of x to use to find the area of the sail.

2 The area of a rectangle, in square units, is defined by the expression $(x + \pi)(x + 5)$. In the expression,

- the value of x is rational, and
- the length of the rectangle is rational.

A Write an expression for the width, in units, of the rectangle. Explain how you know it is the width of the rectangle.

B Is the area of this rectangle rational or irrational? Justify your answer.

C The area of a different rectangle is equal to $x^2 - \pi^2$ square units. Write expressions for the length, in units, and the width, in units, of the different rectangle. Explain how you determined each expression.