

SESSION 1

This session contains 33 multiple-choice questions. Fill in the circle for your answer to each multiple-choice question.

You may use a protractor and a ruler during this session. You may use a calculator during this session.

SAMPLE

Directions: Read each problem. Then fill in the circle of the best answer.

1 What is the value of $\frac{(7^2)(7^6)}{7^9}$?

(A) $\frac{1}{7^3}$

(B) $\frac{1}{7}$

(C) 7

(D) 7^3

2 Which table of values represents a function?

(A)

x	1	3	5	7	9
y	4	4	4	4	4

(B)

x	0	3	5	3	7
y	0	1	2	3	4

(C)

x	2	1	0	1	2
y	5	4	3	2	1

(D)

x	3	3	3	3	3
y	4	6	8	10	12

SESSION 2

This session contains seven multiple-choice questions, seven short constructed-response items, and one extended constructed-response item. Fill in the circle for your answer to each multiple-choice question. Write your answers for the constructed-response items in the spaces provided.

You may use a protractor and a ruler during this session. You may use a calculator during this session.

SAMPLE

36

Natasha has an antique lamp. This table shows the relationship between the number of years Natasha has owned the lamp and its dollar value.

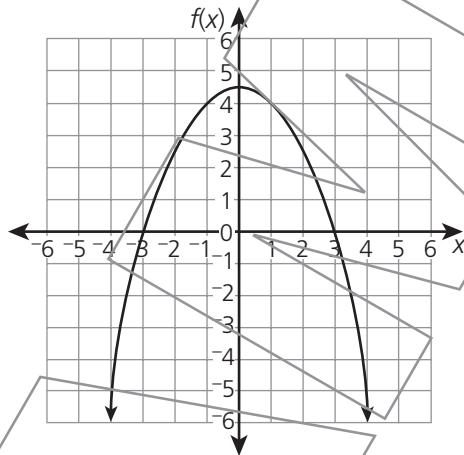
ANTIQUA LAMP	
Years	Value (\$)
4	200
6	250
8	300
10	350

Based on the data, which statement is true?

- (A) The value of the lamp when Natasha bought it was \$50.
- (B) The value of the lamp when Natasha bought it was \$100.
- (C) The lamp increases in value by \$50 each year.
- (D) The lamp increases in value by \$100 each year.

37

The graph of function $f(x)$ is shown on this coordinate plane.



Which statement is true of this function?

- (A) The rate of change decreases for values $x < 0$.
- (B) The rate of change increases for values $-3 < x < 3$.
- (C) The rate of change at $x = -3$ is greater than the rate of change at $x = -1$.
- (D) The rate of change at $x = -1$ is greater than the rate of change at $x = -3$.

46

The World Ocean is made up of Earth's five oceans. The approximate volumes of four of these oceans are shown in the table below.

Ocean	Volume (cubic kilometers)
Arctic	1.88×10^7
Atlantic	3.1×10^8
Indian	2.64×10^8
Pacific	6.6×10^8

Part A: The Indian Ocean contains approximately 20% of the water in the World Ocean. What is the approximate volume, in cubic kilometers, of water in the World Ocean? Write your answer in scientific notation.

Answer: _____ cubic kilometers

Part B: The Southern Ocean, the fifth ocean, contains the rest of the water in the World Ocean. What is the approximate volume of water, in cubic kilometers, contained in the Southern Ocean? Write your answer in scientific notation.

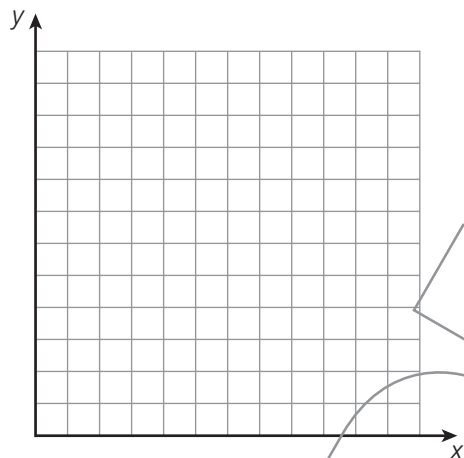
Show your work.

Answer: _____ cubic kilometers

48

The cost of a salad bar is \$4 per pound.

Part A: Use the coordinate plane below to graph the relationship between x , the weight in pounds of a salad from this salad bar, and y , its total cost in dollars.



Part B: What is the equation of the line you graphed in Part A?

Answer: _____

The table below shows the relationship between x , the weight in pounds of a salad, and y , the total cost in dollars, from a different salad bar.

x	y
3	11.25
6	22.50
9	33.75

Part C: Which salad bar is less expensive? Explain how you know.
