3 ✖ **3**

Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

DIRECTIONS

For questions **1-15**, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. **For questions 16-20**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

1. The use of calculator **is not permitted**.

2. All variables and expressions used represent real numbers unless otherwise indicated.

3. Figures provided in this test are drawn to scale unless otherwise indicated.

4. All figures lie in a plane unless otherwise indicated.

5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

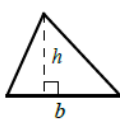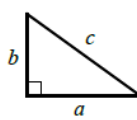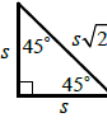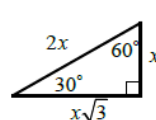### REFERENCE

$A = \pi r^2$

$C = 2\pi r$
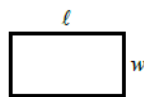
$A = \ell w$
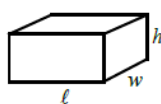
$A = \frac{1}{2}bh$

$c^2 = a^2 + b^2$

Special Right Triangles

$V = \ell wh$

$V = \pi r^2 h$

$V = \frac{4}{3}\pi r^3$

$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3}\ell wh$

The number of degrees of arc in a circle is 360.
The number of radians of arc in a circle is 2π.
The sum of the measures in degrees of the angles of a triangle is 180.

CONTINUE ⟩

1

x	−1	1	3	5
$f(x)$	9	3	−3	−9

The table above shows some values of the linear function f. Which of the following defines f?

A) $f(x) = 2x - 7$

B) $f(x) = 3x + 6$

C) $f(x) = -3x + 6$

D) $f(x) = -2x + 7$

2

For which of the following ordered pairs (x, y) is $y > x - 4$ and $x + y < 5$?

A) $(0, -5)$

B) $(0, 2)$

C) $(5, 3)$

D) $(4, -2)$

3

Which of the following equations represents a line that is parallel to the line with the equation

$$y = \frac{2}{3}x + 2 ?$$

A) $2x + 3y = 5$
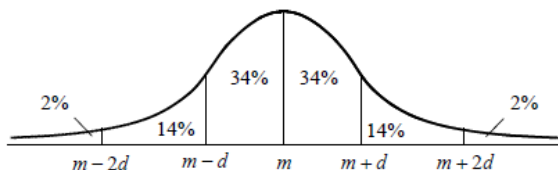
B) $3x + 2y = 9$

C) $4x - 6y = 3$

D) $4x + 6y = -8$

4

If $\dfrac{3^{(a+b)^2}}{3^{(a-b)^2}} = 343$, what is the value of ab?

A) $\dfrac{5}{4}$

B) $\dfrac{3}{2}$

C) $\dfrac{7}{4}$

D) 2

5

The figure above shows a normal distribution with mean m and standard deviation d, including approximate percents of the distribution corresponding to the six regions shown.

The mean value of 500 homes in a county is $225,000 and the standard deviation is $25,000.

Approximately how many of the homes in the county are between $175,000 and $225,000?

A) 310

B) 340

C) 380

D) 410

6

If a number p increased by 120 percent equals a number q decreased by 20 percent, which of the following is true?

A) $q = \dfrac{5}{2} p$

B) $q = \dfrac{11}{4} p$

C) $q = \dfrac{7}{2} p$

D) $q = \dfrac{15}{4} p$

7

Kay purchased a total of 8 bags of Colombia Coffee and Roast Espresso. Each bag of Columbia Coffee costs $25 and each bag of Roast Espresso costs $35. If Kay paid $230 for the coffee and espresso, solving which of the following systems of equations yields the number of bags of Columbia Coffee, c, and the number of bags of Roast Espresso, r?

A) $\begin{cases} c + r = 8 \\ 35c + 25r = 230 \end{cases}$

B) $\begin{cases} c = r + 8 \\ 25c + 35r = 230 \end{cases}$

C) $\begin{cases} c + r = \dfrac{230}{8} \\ 25c + 35r = 230 \end{cases}$

D) $\begin{cases} c + r = 8 \\ 25c + 35r = 230 \end{cases}$

8

$$h(x) = -px^2 + 1$$

For the function h defined above, p is a constant and $h(2) = -1$. What is the value of $h(p)$?
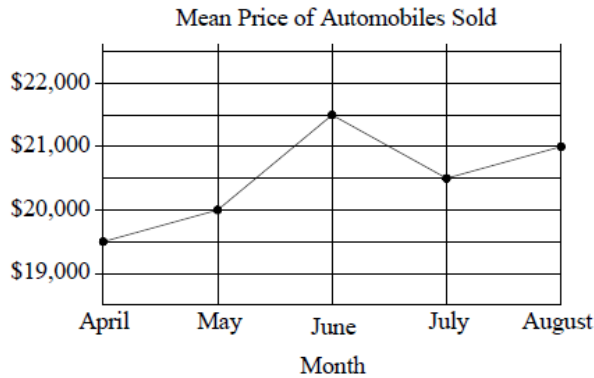
A) $\dfrac{7}{8}$

B) $-\dfrac{5}{4}$

C) $\dfrac{5}{4}$

D) $-\dfrac{7}{8}$

Questions 9-11 refer to the following information.

AUTOMOBILES SOLD AT MAX CAR DEALER, APRIL-AUGUST

Number of Automobiles Sold

Month	Number
April	275
May	395
June	405
July	338
August	262

Mean Price of Automobiles Sold

9

Which of the following is closest to the mean of the prices of the 670 automobiles sold in April and May?

A) $19,600

B) $19,700

C) $19,800

D) $19,900

10

What is the percent increase of the mean price of automobiles sold from May to June?

A) 7%

B) 7.5%

C) 8%

D) 8.5%

11

Max Car Dealer collected a tax equal to 8 percent of the price of each automobile sold in August. Approximately how much did Max Car Dealer collect in taxes from all automobiles sold in August?

A) $42,000
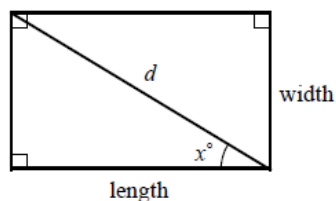
B) $44,000

C) $420,000

D) $440,000

12

$$\frac{3 - i\sqrt{3}}{1 - i\sqrt{3}}$$

If the expression above is rewritten in the form $a + bi$, in which a and b are real numbers, what is the value of b?

A) $-\dfrac{\sqrt{3}}{2}$

B) $\dfrac{\sqrt{3}}{2}$

C) $-\dfrac{\sqrt{3}}{4}$

D) $\dfrac{\sqrt{3}}{4}$

13

length, width, d, $x°$

The figure above shows a rectangle with a diagonal of length d. Which of the following equations represents the area of the rectangle?

A) $d^2 \cos^2 x°$
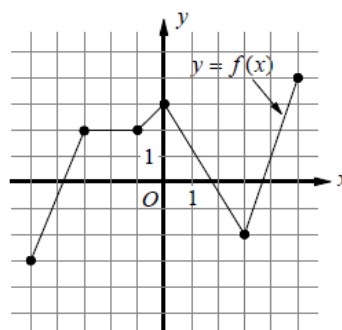
B) $d \sin^2 x°$

C) $d^2 \cos x° \cdot \sin x°$

D) $d \cos x° \cdot \sin x°$

14

Which of the following is equivalent to $\dfrac{7^x \cdot x^7}{7^7 \cdot x^x}$?

A) 1

B) $(x - 7)^{\frac{7}{x}}$

C) $\left(\dfrac{x}{7}\right)^{x-7}$

D) $\left(\dfrac{7}{x}\right)^{x-7}$

15

The complete graph of function f is shown in the xy-plane above, for $-5 \le x \le 5$. Which of the following are true?

I. f is strictly increasing then strictly decreasing for $-1 < x < 3$.

II. $f(-\dfrac{3}{2}) = 2$

III. f is maximum at $x = 0$.

A) I only

B) I and II only

C) II and III only

D) I, II, and III

5

Answers

SAT Practice Test 2 – No Calculator

1. C	2. B	3. C	4. A	5. D
6. B	7. D	8. A	9. C	10. B
11. D	12. B	13. C	14. D	15. B