59. A class of 32 students took a 10-point quiz. The frequency distribution of their scores is given below. What was the median score for the class?

Score	Frequency
0	0
1	0
2	1
3	3
4	5
5	2
6	3
7	5
8	6
9	4
10	3

A. 3
B. 5
C. 6
D. 7
E. 8

60. For certain positive integers a and b, the greatest common divisor of a and b is 1, and $9a = 4b$. If it can be determined, which of the following statements *must* be true for a and b ?

F. 2 is a prime factor of a, and 3 is a prime factor of b.
G. 2 is a prime factor of a, and 3 is not a prime factor of b.
H. 2 is not a prime factor of a, and 3 is a prime factor of b.
J. 2 is not a prime factor of a, and 3 is not a prime factor of b.
K. Cannot be determined from the given information

DO YOUR FIGURING HERE.

END OF TEST 2

STOP! DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

DO NOT RETURN TO THE PREVIOUS TEST.

2 △ △ △ △ △ △ △ △ △ 2

MATHEMATICS TEST

60 Minutes—60 Questions

DIRECTIONS: Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose, but some of the problems may best be done without using a calculator.

Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean.

DO YOUR FIGURING HERE.

1. The table below gives the exact probability of randomly drawing a marble of a particular color from a bag of solid-colored marbles.

Color of marble	Probability
Red	0.2
Blue	0.3
Yellow	0.2
Green	0.1
Orange	0.1
Purple	0.1

What is the probability of randomly drawing a marble that is NOT green and is NOT blue?

A. 0.60
B. 0.63
C. 0.67
D. 0.70
E. 0.90

$0.2+0.2+0.1+0.1$

$=0.6$

2. What is the value of x in the equation $\frac{3}{4}=x+\frac{1}{3}$?

F. $\frac{1}{4}$
G. $\frac{5}{12}$
H. $\frac{4}{7}$
J. $1\frac{1}{12}$
K. 2

Shift & Solve

$\frac{3}{4}-\frac{1}{3}=\frac{5}{12}$

3. $(3a^6b)(7a^3b^9)$ is equivalent to:

A. $10a^9b^{10}$
B. $10a^{18}b^9$
C. $21a^9b^9$
D. $21a^9b^{10}$
E. $21a^{18}b^9$

$21\,a^{6+3}\,b^{1+9}$

$21\,a^9\,b^{10}$

DO YOUR FIGURING HERE.

4. During the month of July, Garth's Video tracked the number of videos rented for each transaction. A total of 600 transactions were made during the month of July. The results are shown in the table below. How many transactions of exactly 3 video rentals were made during the month of July?

Number of videos rented	Percent of transactions
1	20%
2	36%
3	26%
4	8%
5 or more	10%

F. 48
G. 120
H. 156
J. 216
K. 336

26% x 600

5. The total price for the pizza Jana and her friends bought was $15.60. The pizza was cut into 8 equal slices, and Jana ate 3 of the slices. Jana paid a portion of the total price that was the same as the portion of the pizza she ate. What portion of the total price did Jana pay?

A. $1.95
B. $4.68
C. $5.20
D. $5.85
E. $7.80

$ S
15.60 → 8
x → 3

15.6 x 3 / 8

= 5.85

6. If $f(x) = (5x + 3)^2$, then $f(1) = ?$

F. 8
G. 16
H. 28
J. 34
K. 64

$(5 \times 1 + 3)^2 = 64$

7. The mean of 4 numbers is 6. Given that 3 of the numbers are 3, 6, and 7, what is the remaining number?

A. 2
B. $\frac{8}{3}$
C. 4
D. 8
E. 16

Mean = Sum / no.

$6 = \frac{3+6+7+x}{4}$

shift solve

(Average) Mean = Sum / no.

Mode = Most repeated

Median = Middle - arrange...

Range = G - S

DO YOUR FIGURING HERE.

8. The midpoint of $\overline{NQ}$ is located at $M(3,5)$ in the standard (x,y) coordinate plane. Given that the coordinates of Q are $(1,2)$, what are the coordinates of N?

F. $\left(1, \frac{3}{2}\right)$
G. $\left(2, \frac{7}{2}\right)$
H. (5, 8)
J. (5,12)
K. (7,12)

(x, y)
Midpoint = $\left(\frac{x+x}{2}, \frac{y+y}{2}\right)$
$(3,5) = \left(\frac{1+x}{2}, \frac{2+y}{2}\right)$
$3 = \frac{1+x}{2}$ → $x=5$
$5 = \frac{2+y}{2}$ → $y=8$

9. What is the value of $|-3| - |7-49|$?

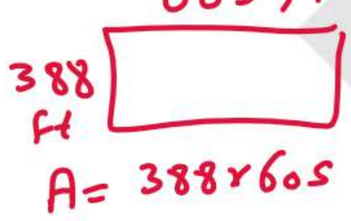
A. −45
B. −39
C. 39
D. 45
E. 59

shift hyp

10. Australia's Sydney Opera House covers a rectangular region that has a length of 605 feet and a width of 388 feet. Which of the following values is closest to the area, in acres, of the rectangular region?

(Note: 1 acre = 43,560 square feet)

F. 5
G. 70
H. 110
J. 68,000
K. 230,000



$A = 388 \times 605 \text{ ft}^2$

acre	ft^2
1	43560
x	388x605

$\frac{388 \times 605 \times 1}{43560}$
$= 5.1$

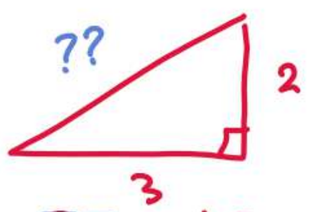
11. $5^2x^{-2}y^4 7^{-1}$ is equivalent to:

A. $\frac{10y^4}{7x^2}$
B. $\frac{25y^4}{7x^2}$
C. $\frac{70y^4}{x^2}$
D. $-175x^2y^4$
E. $175x^2y^4$

$5^2 \times 7^{-1} = \frac{25}{7}$

12. The lengths of the 2 shorter sides of a right triangle are 2 cm and 3 cm, respectively. Which of the following values is closest to the length, in centimeters, of the longest side of the triangle?

F. 2.2
G. 2.3
H. 3.6
J. 5.0
K. 6.5



$\sqrt{2^2+3^2}$
$= 3.6$

we ♥ you Mr. Kably

Farah n nauran 19 ♥