

Name: Ken Date: _____ Score: _____

MATHEMATICS TEST
8 Minutes—8 Questions

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

but some of the problems may best be done without using a calculator.

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.

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

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose,

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.

Pre-Algebra 23% ~ about 14 out of 60

1. A number is increased by 25% and the resulting number is then decreased by 20%. The final number is what percent of the original number?

- A. 90%
- B. 95%
- C. 100%
- D. 105%
- E. 120%

Let $n = 20$. If it is increased by 25%, it becomes $20 + 5 = 25$. Take 20% of 25 and subtract. I get the amount I started with.

2. Two numbers are *reciprocals* if their product is equal to 1. If x and y are reciprocals and $x > 1$, then y must be:

- F. less than -1 .
- G. between 0 and -1 .
- H. equal to 0.
- J. between 0 and 1.
- K. greater than 1.

$x > 1, y = \frac{1}{x}$

3. In teaching a lesson on the concept of thirds, Ms. Chu uses a divide-and-set-aside procedure. She starts with a certain number of colored disks, divides them into 3 equal groups, and sets 1 group aside to illustrate $\frac{1}{3}$. She repeats the procedure by taking the disks she had NOT set aside, dividing them into 3 equal groups, and setting 1 of these groups aside. If Ms. Chu wants to be able to complete the divide-and-set-aside procedure at least 4 times (without breaking any of the disks into pieces), which of the following is the minimum number of colored disks she can start with?

- A. 12
- B. 15
- C. 27
- D. 54
- E. 81

$\frac{81}{3} \rightarrow \frac{27}{3} \rightarrow \frac{9}{3} \rightarrow 3$

Elementary Algebra 17% ~ about 10 out of 60

4. Ms. Lewis plans to drive 900 miles to her vacation destination, driving an average of 50 miles per hour. How many miles per hour faster must she average, while driving, to reduce her total driving time by 3 hours?

- A. 5
- B. 8
- C. 10
- D. 15
- E. 18

$d = r(t)$
 $900 = (50 + s)(15)$
 $60 = 50 + s$
60 miles per hour

$10 = s$