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**MIDDLE TENNESSEE STATE UNIVERSITY**  
MURFREESBORO, TENNESSEE  
**UNIVERSITY OF TENNESSEE AT MARTIN**  
MARTIN, TENNESSEE

**JUNIOR HIGH/MIDDLE SCHOOL  
MATHEMATICS COMPETITION**

Seventh Grade Test  
1994  
Scoring Formula  $4R - W + 40$

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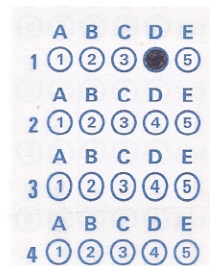
**DIRECTIONS:**

This is a test of your competence in junior high school mathematics. For each problem there are 5 possible answers listed. You are to work the problems, determine the correct answer, and indicate your choice on the separate answer sheet provided.

**SAMPLE:**

1. If  $x + 1 = 2$ , then  $x$  equals
  - a) 0
  - b) 2
  - c) -1
  - d) 1
  - e) none of the above

The correct answer is 1 which is d), so you would answer this problem by darkening the space on the answer sheet corresponding with this choice.



If you change your mind about your answer, be sure to erase completely. Avoid wild guessing, as wrong answers count against you. Do not mark more than one answer for any problem. Make no stray marks of any kind on your answer sheet.

When told to do so, open your test booklet and begin. When you have finished one page, go on to the next. The working time for the entire test is 80 minutes.

1. 84 is 175% of what number?
  - a) 1.47
  - b) 48
  - c) 147
  - d) 4,800
  - e) 14,700
  
2.  $-9 \cdot (-15) \cdot (-4) =$ 
  - a) -540
  - b) -360
  - c) -28
  - d) 28
  - e) 540
  
3. Which of the following numbers is divisible by 3?
  - a) 3918
  - b) 4565
  - c) 5555
  - d) 6677
  - e) 7673
  
4. At the beginning of the month, Norm owes his credit card company \$688. During the month, he uses the card to make purchases of \$71, \$45, \$70, and \$83. He sends in a payment of \$20 and returns some merchandise for \$47, which is credited to his account. If no finance or other charges are assessed, how much does he owe at the end of the month?
  - a) \$525
  - b) \$750
  - c) \$890
  - d) \$920
  - e) \$930
  
5. Find all factors of 39.
  - a) 3, 13
  - b) 1, 39
  - c) 1, 3, 13, 39
  - d) 3, 13, 39
  - e) 3, 11
  
6.  $11 + (-13) + (-33) + 15 + (-15) =$ 
  - a) -87
  - b) -55
  - c) -35
  - d) -25
  - e) 87

10. Chris picks berries for a week during the summer. Each day she picks 5 lbs. more berries than she did the day before. By the end of the 7th day, she has picked 420 pounds in all. How many pounds did Chris pick the first day?
- a) 25 lbs.
  - b) 40 lbs.
  - c) 45 lbs.
  - d) 50 lbs.
  - e) 80 lbs.
11. The product of two negative integers is 84. Find the smaller integer if one of the integers is 5 more than the other.
- a) -21
  - b) -14
  - c) -12
  - d) -7
  - e) -4
12. The least number that is divisible by each of the natural numbers 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 is:
- a) 9,000
  - b) 12,000
  - c) 27,720
  - d) 239,500,800
  - e) 3,456,789,101,112
13. 
$$\frac{\frac{11}{15} - \frac{3}{10}}{\frac{1}{5} + \frac{1}{2}} =$$
- a) 13/21
  - b) 18/25
  - c) 1
  - d) 56/7
  - e) 15
14. A box contains 7 red, 9 green, and 5 yellow marbles. If one marble is drawn at random, what is the probability that it is not green?
- a) .25
  - b) 1/3
  - c) 3/7
  - d) 4/7
  - e) .75

31. At Ajax Trucking, four times as many men as women apply for work. If  $\frac{1}{7}$  of the applicants are hired and  $\frac{1}{11}$  of the men who apply are hired, what fraction of the women who apply are hired?

- a)  $\frac{1}{77}$
- b)  $\frac{7}{11}$
- c)  $\frac{18}{77}$
- d)  $\frac{27}{77}$
- e)  $\frac{11}{7}$

32. The Valley Restaurant Association wanted to determine the popularity of three of its restaurants. It surveyed 39 people in the past month and the results show that:

- 19 people ate at Ruth's Ribs
- 8 people ate at Patty's Pasta
- 16 people ate at Danny's Diner
- 6 people ate at Ruth's and Danny's
- 4 people ate at Danny's and Patty's
- 5 people ate at Ruth's and Patty's
- 4 people ate at all three restaurants

Find the number of people that did not eat at any of the restaurants.

- a) 0
- b) 5
- c) 7
- d) 8
- e) 10

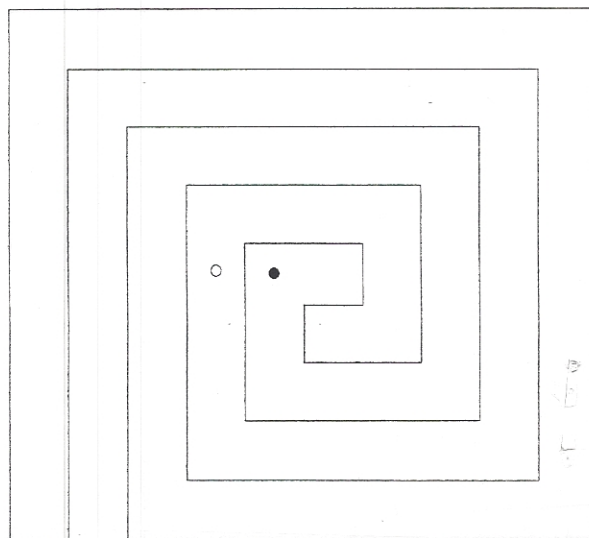
33. If it takes 30 seconds to make each cut, how long will it take to cut 12 boards that are 12 feet long into boards that are 4 feet long if only one cut can be made in one board at a time?

- a) 6 minutes
- b) 10 minutes
- c) 12 minutes
- d) 15 minutes
- e) 18 minutes

34. Three partners in a small business own all of the stock in the ratio 6:8:2. If the total stock is valued at \$599,984, what is the value, to the nearest dollar, of each partner's shares, listed in the same order as their ratios?

- a) \$99,997; \$74,998; \$299,992
- b) \$299,992; \$74,998; \$99,997
- c) \$74,998; \$299,992; \$224,994
- d) \$224,994; \$299,992; \$74,998
- e) \$224,994; \$224,994; \$299,992

35. Determine whether points  $\bullet$  and  $\circ$  are inside or outside the curve.



- a) both are inside
- b) both are outside
- c)  $\bullet$  is inside,  $\circ$  is outside
- d)  $\bullet$  is outside,  $\circ$  is inside
- e) the curve has no outside

36. Over the past three years Chris has received raises of 5%, 4%, and 5%, respectively. What is the actual percent increase (to the nearest tenth of a percent) in Chris's salary?

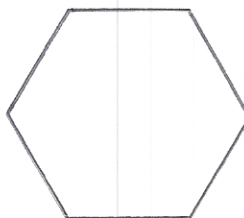
- a) 0.0%
- b) 14.0%
- c) 14.7%
- d) 15.0%
- e) 15.8%

37. Find  $x$  if the distance between the points  $P(-2, 2)$  and  $Q(x, 5)$  is 5.

- a)  $x = 6$  or  $2$
- b)  $x = -2$  or  $6$
- c)  $x = 6$  or  $-6$
- d)  $x = -6$  or  $2$
- e)  $x = 2$  or  $-2$

38. How many lines of symmetry does a regular hexagon have (see figure below)?

- a) 3
- b) 5
- c) 6
- d) 10
- e) 12



39. If a couple plans to have 4 children, what is the probability of having all girls?
- a)  $1/32$
  - b)  $1/16$
  - c)  $1/4$
  - d)  $1/2$
  - e) 1
40. If a letter is drawn from container 1, shown below, and placed in container 2, then a letter is drawn from container 2, what is the probability that the last letter drawn is a T?

HISTORY	SHIFT
#1	#2

- a)  $1/21$
- b)  $2/21$
- c)  $1/6$
- d)  $4/21$
- e)  $5/21$