FUNDAMENTALS HOMEWORK

Definitions: fill out the chart.

Term	Definition	Examples
INTEGER		
NEGATIVE		
POSITIVE		
DISTINCT		
EVEN		
ODD		
DIFFERENCE		
SUM		
PRODUCT		
QUOTIENT		
CONSECUTIVE		
ORDER OF OPERATIONS		
REMAINDER		
PRIME		
FACTOR / DIVISOR		
MULTIPLE		
RULES OF ZERO		

1. A number is always divisible by its

(A) exponents
(B) multiples
(C) digits
(D) remainder
(E) factors

2. If a problem tells you that x and y are distinct integers, then x and y cannot be

(A) even
(B) equal
(C) prime
(D) negative
(E) consecutive

2. $-8-(-7)=$

(A) -15
(B) -10
(C) -1
(D) 1
(E) 15

2. Which of the following does NOT have a remainder of 1?

(A) $\frac{11}{2}$
(B) $\frac{51}{3}$
(C) $\frac{101}{4}$
(D) $\frac{101}{100}$
(E) $\frac{1001}{10}$

3. Which of the following numbers is NOT prime?

(A) 2
(B) 3
(C) 5
(D) 7
(E) 9

3. How many prime factors does 10 have?

(A) 1
(B) 2
(C) 3
(D) 4
(E) 5

3. When a certain number is divided by 5, the quotient is 53. What is the number?

(A) 106
(B) 159
(C) 200
(D) 265
(E) 345

4. Which of the following is a prime factor of 44?

(A) 4
(B) 7
(C) 11
(D) 22
(E) 44

5. The product of the even integers from 1 to 7 inclusive is how much greater than the sum of the integers from 2 to 6 inclusive?

(A) 8
(B) 11
(C) 23
(D) 28
(E) 34

5. How many distinct prime factors does 12 have?

(A) 1
(B) 2
(C) 3
(D) 4
(E) 5

5. How many factors do 12 and 16 have in common?

(A) 7
(B) 6
(C) 5
(D) 4
(E) 3

5. Which of the following contains only factors of the number 75?

(A) {1, 4, 5, 20}
(B) {1, 3, 5, 25}
(C) {0, 75, 100, 125}
(D) {3, 15, 17, 25}
(E) {2, 3, 5, 15}

6. How many distinct prime factors of 16 are there?

(A) 1
(B) 2
(C) 4
(D) 8
(E) 16

7. Robert wakes up at 7:30 a.m. Before he leaves for work, he showers for 15 minutes, eats breakfast for 10 minutes, and reads the newspaper for 15 minutes. He then travels to work, which takes 25 minutes. If this represents a complete list of all the activities Robert does before he arrives at work, at what time does he arrive at work?

(A) 8:00 a.m.
(B) 8:30 a.m.
(C) 8:35 a.m.
(D) 8:45 a.m.
(E) 9:15 a.m.

10. A negative odd number multiplied by a positive even number will yield what kind of product?

I. A negative number
II. A positive number
III. An even number
IV. An odd number

(A) I only
(B) IV only
(C) I and III only
(D) I and IV only
(E) II and III only

16. A is a set of prime one-digit numbers, and B is a set of odd integers. Which one of the following CANNOT be a product of a number from set A and a number from set B?

(A) 6
(B) 10
(C) 12
(D) 45
(E) 49

22. Which of the following are possible values for the sum of five consecutive odd integers?

I. 0
II. −1
III. −5

(A) I only
(B) II only
(C) III only
(D) I and III only
(E) II and III only

FRACTIONS

3. Which of the following fractions is greatest?

(A) $\frac{4}{9}$

(B) $\frac{1}{2}$

(C) $\frac{8}{15}$

(D) $\frac{6}{11}$

(E) $\frac{3}{5}$

4. If $\frac{1}{4}+\frac{1}{6}=\frac{x}{48}$, then $x=$

(A) $\frac{1}{2}$

(B) 2

(C) 4.8

(D) 20

(E) 48

4. $\frac{\frac{3}{5}}{\frac{6}{5}}=$

(A) $\frac{1}{2}$

(B) $\frac{1}{3}$

(C) $\frac{1}{4}$

(D) $\frac{1}{5}$

(E) $\frac{1}{6}$

4. $\frac{\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}}{4}=$

(A) $\frac{1}{16}$

(B) $\frac{1}{4}$

(C) $\frac{1}{2}$

(D) 1

(E) 4

6. $\frac{7}{8}$ of what number is 56?

(A) 7
(B) 49
(C) 54
(D) 64
(E) 448

7. A fish tank is $\frac{2}{9}$ full. If the tank holds 117 gallons of water when filled to the top, how many gallons are presently needed to completely fill the tank?

(A) 26
(B) 65
(C) 91
(D) 97
(E) 115

14. $\frac{2+4}{\frac{1}{2}+\frac{1}{3}}=$

(A) $1\frac{1}{5}$

(B) $7\frac{1}{5}$

(C) 15

(D) 30

(E) 36

15. Which of the following is NOT equal to $\frac{1}{5}$ of an integer?

(A) -1
(B) $-\frac{1}{5}$
(C) 1
(D) $\frac{3}{2}$
(E) 5

8. $\frac{0.8+0.8+0.8+0.8+0.8}{5} =$

(A) $\frac{2}{3}$
(B) $\frac{4}{5}$
(C) 1
(D) $\frac{23}{12}$
(E) $\frac{25}{12}$

DECIMALS

6. 0.9381 rounded to the nearest tenth equals

(A) 1.0
(B) 0.94
(C) 0.93
(D) 0.9
(E) 0.8

14. Which of the following is the closest approximation of the decimal equivalent of $\left(\frac{1}{9}\right)^2$?

(A) 0.123
(B) 0.09
(C) 0.081
(D) 0.0123
(E) 0.0081

6. $\frac{(-4.2)(3.6)}{2.1} =$

(A) -72
(B) -7.2
(C) 0.72
(D) 7.2
(E) 72

23. How many hundredths of a minute are there in 1.8 seconds?

(A) 180
(B) 30
(C) 6
(D) 3
(E) 0.3

6. Dividing by 2 is the same as multiplying by

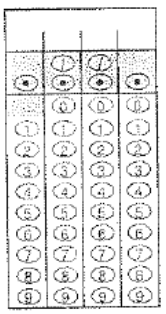
(A) 0.05
(B) 0.5
(C) 0.75
(D) 2
(E) 5

GRID-INS

16. $\frac{8}{6} - \frac{1}{3} - \frac{3}{9} - \frac{4}{12} =$

16. In a group of 30 schoolchildren, $\frac{1}{6}$ are girls. How many boys are in the group?

16.



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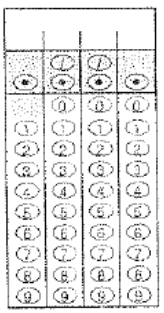

17. If $x = \frac{2}{3}$ and $y = \frac{1}{2}$, what is the value of $2x + 2y$?

18. A full water jug has 20 ounces poured out of it, and is now $\frac{3}{5}$ full. How many ounces did the full jug contain?

19. The number 48 is divisible by how many positive integers?

19. How many integers between 6 and 60 (inclusive) are divisible by 6?

20. Joe has a collection of paperweights that numbers fewer than 500. If he decides to give away all his paperweights and has the option of dividing the collection equally among 5, 6, or 7 friends, what is one possible value for the total number of paperweights in Joe's collection?

21. If $-1 < x < 3$ and $4 < y < 5$, what is one possible value for $x + y$?

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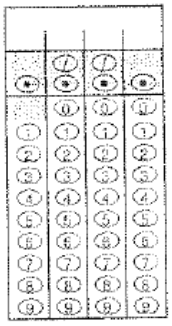

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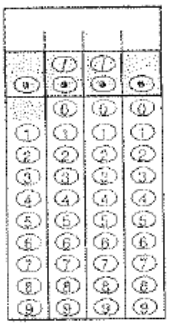

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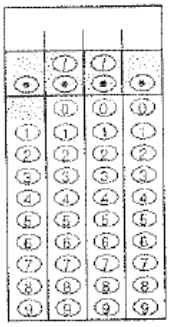

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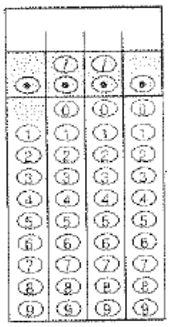

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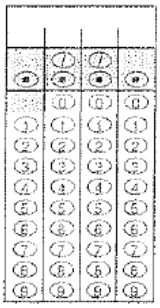

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