

CIE-USA/DFW

Math Comp 2011

Grade 7

40 questions

Time: One Hour

Note:

- Make sure to write all your answers on the answer sheet. Only the answer sheet will be graded.
- Each question only has one correct answer.
- Print your name clearly and legibly below.

Name _____

Code _____

Room _____

Time End _____

1. $0 \times 100 + 100 \times 10 + 0 \times 10 + 1 = \underline{\quad}$
- A. 110 B. 1111 C. 1011 D. 1001 E. 1101
2. If my bad hair day began 700 minutes before 7:20pm, then my bad hair day began at $\underline{\quad}$.
- A. 1:40 pm B. 1:00 pm C. 7:40 am D. 9:00 am E. 7:00 am
3. $150 + 250 + 350 + 450 + 550 = 10 \times \underline{\quad}$.
- A. 160 B. 175 C. 165 D. 185 E. 190
4. Of the whole numbers 1, 2, 3, ..., 98, 99, how many are greater than the sum of their digits?
- A. 88 B. 89 C. 91 D. 90 E. 99
5. 3 is a prime number, so October 3rd is a prime day. In all, October has $\underline{\quad}$ prime days.
- A. 9 B. 10 C. 11 D. 12 E. 13
6. 500 nickels + 25 dimes + 75 pennies = $\underline{\quad}$ quarters.
- A. 113 B. 24 C. 104 D. 33 E. 48
7. If a square's side-lengths are integers, its perimeter couldn't be $\underline{\quad}$.
- A. 104 B. 12 C. 8 D. 15 E. 24
8. $\sqrt{169} = \sqrt{16} + \sqrt{x}$, then $x = \underline{\quad}$.
- A. 49 B. 64 C. 81 D. 100 E. 153
9. By how much does the sum $19 + 28 + 37 + 46 + 55 + 64 + 73 + 82 + 91$ exceed the sum $18 + 27 + 36 + 45 + 54 + 63 + 72 + 81 + 90$?
- A. 9 B. 10 C. 81 D. 90 E. 100

10. What's the largest odd factor of 243?

- A. 81 B. 243 C. 27 D. 9 E. 3

11. The smallest whole multiple of 10 that's greater than $8 \times 8 \times 8$ is ____.

- A. 5.2×10 B. 52×100 C. 520 D. $26 \times 10 + 30$ E. $5.2 \times 100 + 10$

12. Uncle Wang eats two books a week; Aunt Wang eats one book every two months. In a year, Uncle eats __ more books than Aunt.

- A. 45 B. 20 C. Between 80 and 96
D. Between 97 and 101 E. Greater than 101

13. At most how many students can sit in a row of 33 chairs, if seated students must be separated by at least one empty chair?

- A. 19 B. 17 C. 18 D. 16 E. 15

14. In a rectangle with perimeter 40 *cm* and area 36 cm^2 , the longer side's length is __ *cm* more than that of the shorter side.

- A. 4 B. 6 C. 18 D. 10 E. 16

15. If $x \otimes y = \frac{x+y}{x-y}$, then $(3 \otimes 5) \otimes 4 =$ ____.

- A. 0 B. -1 C. -2 D. 2 E. 1

16. Carlos Montado was born on Saturday, November 9, 2011, on what day of the week will Carlos be 708 days old?

- A. Sunday B. Monday C. Tuesday D. Wednesday E. Friday

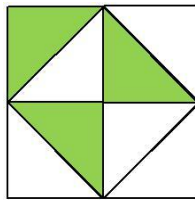
17. If the sum of two whole numbers is 36 more than their difference, then one of them must be ____.

- A. 9 B. 12 C. 18 D. 24 E. 15

18. $(x^2 - 4y^2)(2x^2 - 3x + 1) = \underline{\hspace{2cm}}$.

- A. $(x + 2y)(x - 2y)(x + 1)(2x + 1)$
- B. $(x + 2y)(x - 2y)(x - 1)(2x - 1)$
- C. $(x + 2y)(x + 2y)(x - 1)(2x + 1)$
- D. $(x + 2y)(x - 2y)(x + 1)(2x - 1)$
- E. $(x + 2y)(x - 2y)(x + 2)(2x + 1)$

19. A square with a perimeter of 32 is split into 8 identical triangles, as shown, what's the sum of the areas of 3 shaded triangles?



- A. 12
- B. 20
- C. 32
- D. 24
- E. 40

20. Today is my birthday. My age, today, in months, is 72 times my age 5 years ago, in years. My age today, in years, is $\underline{\hspace{2cm}}$.

- A. 6
- B. 7
- C. 8
- D. 9
- E. 12

21. At most $\underline{\hspace{2cm}}$ circles of radius 1 with non-overlapping interiors can fit inside a square with side-length 6.

- A. 8
- B. 10
- C. 9
- D. 11
- E. 12

22. $\sqrt{\sqrt{81 \times 81 \times 81 \times 81}} = \underline{\hspace{2cm}}$.

- A. 3
- B. 9
- C. 27
- D. 36
- E. 81

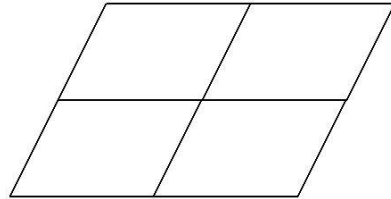
23. Of 2011 integers whose product is even, at most $\underline{\hspace{2cm}}$ can be odd.

- A. 0
- B. 1
- C. 2009
- D. 2010
- E. 2011

24. Which of these numbers equals one-ninth of its own reciprocal?

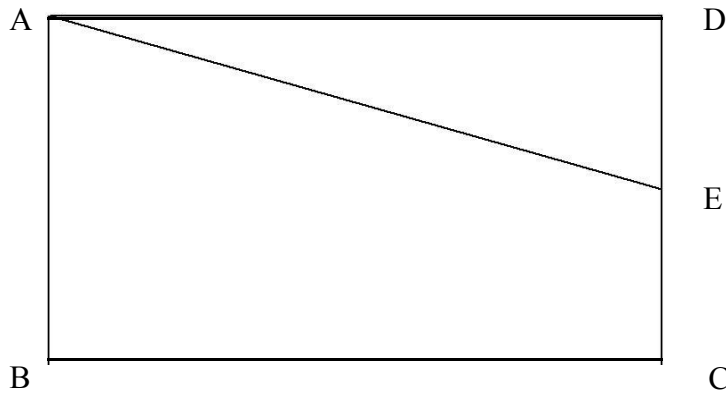
- A. 3 B. $\frac{1}{3}$ C. 9 D. $\frac{1}{9}$ E. $\frac{1}{6}$

25. In the figure shown, there are parallelograms of many sizes. How many total parallelograms are there in the diagram?



- A. 4 B. 6 C. 8 D. 9 E. 5

26. In a rectangle $ABCD$, $\frac{\text{the area of triangle } ADE}{\text{the area of quadrilateral } ABCE} = \frac{1}{6}$. What's the ratio of the length of segment DE to the length of segment CE ?



- A. $\frac{2}{3}$ B. $\frac{3}{4}$ C. $\frac{1}{3}$ D. $\frac{2}{5}$ E. $\frac{5}{2}$

27. Ten years ago, the sum of the ages of Ted and his twin brother Todd was 22. How old is Ted now?

- A. 15 B. 16 C. 21 D. 32 E. 42

28. $(11^3 - 5^3) - (11^2 - 5^2) = \underline{\hspace{2cm}}$.

- A. 1110 B. 1060 C. 1070 D. 1080 E. 1090

29. The sum of three consecutive odd integers is -159 . What's the difference of the largest and the smallest integers?

- A. 2 B. 4 C. -50 D. -52 E. -54

30. Given $a = 2$ and $b = 3$, find x if $x = \left(\frac{1}{a} - \frac{1}{b}\right) \div \left(\frac{3}{4a} - \frac{3}{4b}\right)$.

- A. 0.75 B. $1.\bar{6}$ C. $0.\bar{6}$ D. $1.\bar{3}$ E. None of them

31. If $(4^x)(16) = 256$. What's the value of x ?

- A. 16 B. 4 C. 1 D. 2 E. 8

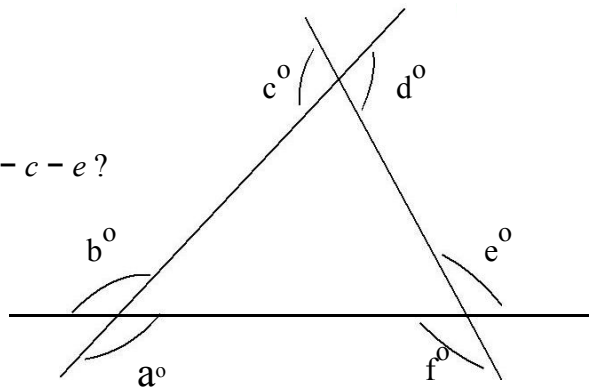
32. If $\frac{5}{33}$ is expressed in decimal form, what digit is in the 94^{th} place to the right of the decimal point?

- A. 1 B. 3 C. 5 D. 2 E. 4

33. The quotient of two consecutive positive integers is 1.05. What's the product of these two integers?

- A. 41 B. 43 C. 210 D. 360 E. 420

34. What's the value of $a + f + d - b - c - e$?



- A. 0 B. 90 C. 180 D. 360 E. 720

40. $4^3 \cdot 4^3 = \underline{\hspace{1cm}}$.

A. 16^9

B. 16^6

C. 4^9

D. 4^6

E. 8^3

TIE BREAKER PROBLEMS:

41. Consecutive letters of the alphabet, starting with A, are given increasing consecutive integer values. If $H + K + L = 2011$, then the average of all 26 of the consecutive integers is $\underline{\hspace{1cm}}$.

A. 650

B. 673.5

C. 655.5

D. 663

E. 670

42. What's the last digit [units digit] of 13^{2011}

A. 3

B. 1

C. 9

D. 7

E. 5

SCRAP PAPER