

2007 MathEdge+ Beginner Level Contest

1st and 2nd graders do problems 1-10. Please box the answer. No partial credit will be given. Only correct answer counts. No Calculator. 30 mins

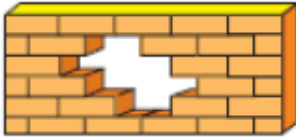
- 1) How many different digits can be found from the “face” picture?

ANS: 6

SOL: The total six different digits are 2 (the hair clip), 3 (the hair), 6 (the eyes), 7 (the nose), 8 (three of them – the ears and mouth), and 0 (the face).



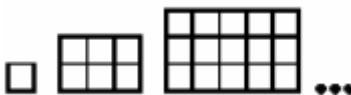
- 2) How many bricks are missing in this wall?



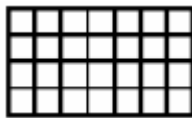
ANS: 6

SOL: The top and bottom missed one and the middle two rows missed two each. Total missed = 6.

- 3) Draw the next figure to the sequence:



ANS:



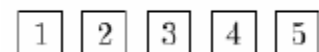
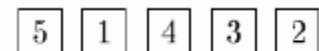
- 4) What number is covered by ? in the last picture below?



ANS: 1

SOL: The number in the middle circle = the number of people in the upper half of the circle (shaded) – the number of people shown in the lower half of the circle. In the last picture, $? = 4 - 3 = 1$

- 5) Five cards are laying on the table in the order: 5, 1, 4, 3, 2 as shown in the top row of the picture. They need to be placed in the order shown in the bottom row. In each move, any two cards may be switched. What is the least number of moves that need to be made?



ANS: 3

SOL: 1) switch 5 and 1, then 2) 5 and 2, then 3) 4 and 3.

- 6) Using only digits 1 and 2, how many different 1 or 2-digit counting numbers can one make?

ANS: 6

SOL: $2 + 2 \times 2 = 6$ different 1 or 2-digit whole numbers can be made: 1, 2, 11, 12, 21, 22

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- 7) Five years ago, the sum of ages of Apple, Beatrice and Cindy was 29 years. What would be the sum of their ages now?

ANS: 44

SOL: $29 + 3 \times 5 = 29 + 15 = 44$

- 8) Alice lives with her parents, two sisters, one brother, two dog, three cats, two parrots, and six fish. What is the total number of legs that they have altogether?

ANS: 36

SOL: 6 people = 12 legs; 2dogs and 3cats = 20 legs; 2 parrots = 4 legs; 6 fish = 0 legs. Total legs = $12 + 20 + 4 + 0 = 36$

- 9) Beatrice said to Cindy, “If you give me 7 stickers, then I would have exactly as many stickers as you.” How many more stickers does Cindy have than Beatrice?

ANS: 14

SOL: Cindy must have twice as much of 7 than Beatrice.

- 10) As Heather wrote the problem on the board: $32 + 24 + 3 + 13 = 107$, she forgot one digit. What digit did she miss and from which number?

ANS: 8, 3

SOL: The number 3 should be 38 for the sentence to make sense.

----- 1st and 2nd graders end here -----

- 11) What is the least number of children in a family so that each child has at least one brother and at least one sister?

ANS: 4

SOL: For each child to have at least one brother and at least one sister, there must be 4 children with 2 brothers and 2 sisters.

- 12) The first day of a certain month that has 30 days is a Tuesday. How many Tuesdays does this month can have?

ANS: 5

SOL: 30 days can have 4 full weeks plus a few days. Whatever day occurs on the first day of the month will repeat 4 more times in that month. Thus, 5 times.

- 13) Who is right?

Andy: “The largest number possible has 0 as the last digit.”

Bill: “The largest number is googolplex.”

Clark: “The largest number possible has 1000 digits.”

Danny: “The largest number possible has all 9’s.”

Elvis: “The largest number possible cannot be written.”

ANS: Elvis

SOL: The largest number has infinite number of digits which will never end.

- 14) Two of the numbers located on the two circles (see the picture) are represented by letters A and B. The sum of the numbers on each circle is equal to 55. What number is represented by letter A?

ANS: 10

SOL: Sum of lower circle = $47 + B = 55 \rightarrow B = 8$; Sum of upper circle = $37 + A + B = 55 \rightarrow A + B = 18$. Since $B = 8$, then $A = 18 - 8 = 10$.

