1. Jack, who is 6 feet tall, stands next to a tree. The length of his shadow is 3 feet, and he measured the length of the trees shadow to be 10 feet. Find the height of the tree.

(a) 20

(b) 37

(c) 36

(d) 28

2. Anderson is the winner of the local chess tournament. If the tournament is single-elimination with no byes (matches that a player can choose not to play in), and Anderson defeated seven opponents to win, how many competitors were left in the tournament after Round 1?

(a) 51

(b) 82

(c) 64

(d) 102

3. What is 2(2-2(2-2(2-2(2-2(2)))))?

(a) 21

(b) 32

(c) 15

(d) 44

4. Dr. Peterson is preparing to give his students their math final test scores. Symonds decides to question him about every aspect of the class's scores. Dr. Peterson becomes angry and threatens to punish him by taking off 2/7 of a point for every question he asks. If Symonds' original score was a 100, what is the maximum number of questions he can ask and still pass? (65 and below is failing)

(a) 122

(c) 124

(b) 123

(d) 125

5. Mark decides to eat one piece of milk chocolate and one piece of white chocolate every day for three weeks. A piece of milk chocolate costs $2 more than a piece of white chocolate, and the cost of Mark's chocolate over the three weeks is $105. How many dollars does one piece of milk chocolate cost?
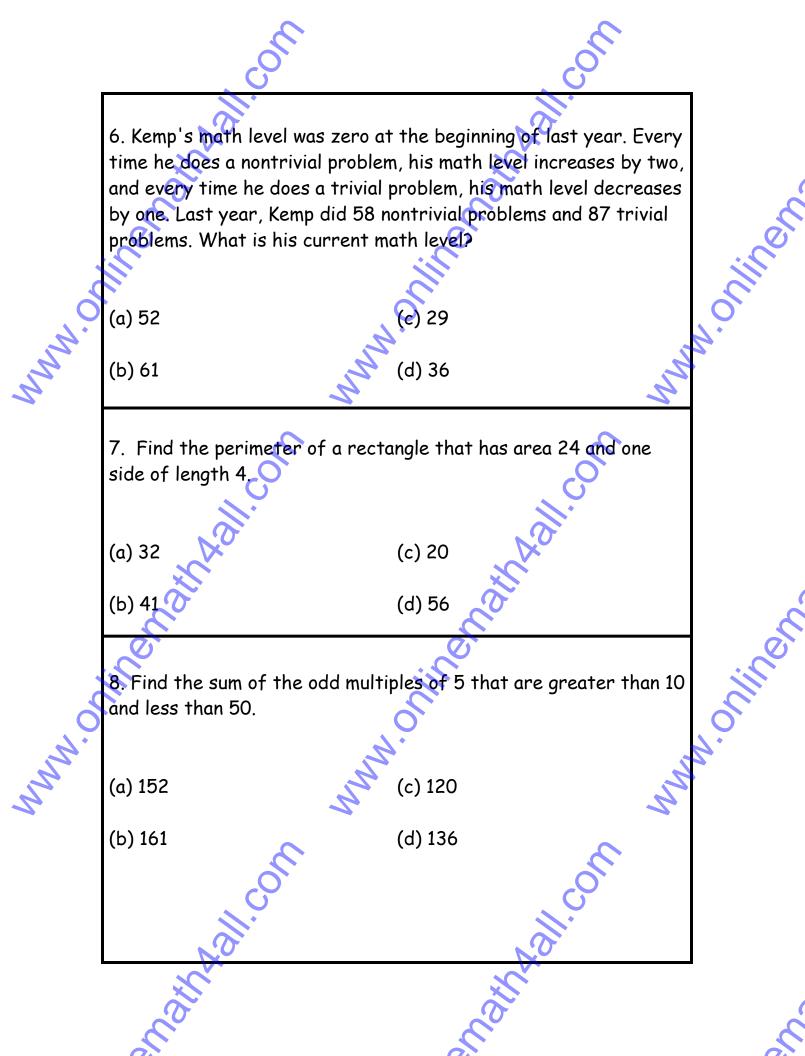
(a) 3.50

(c) 1.60

(b) 2.10

(d) 4.20

6. Kemp's math level was zero at the beginning of last year. Every time he does a nontrivial problem, his math level increases by two, and every time he does a trivial problem, his math level decreases by one. Last year, Kemp did 58 nontrivial problems and 87 trivial problems. What is his current math level?

(a) 52   (c) 29

(b) 61   (d) 36

7. Find the perimeter of a rectangle that has area 24 and one side of length 4.

(a) 32   (c) 20

(b) 41   (d) 56

8. Find the sum of the odd multiples of 5 that are greater than 10 and less than 50.

(a) 152   (c) 120

(b) 161   (d) 136

9. Compute the volume of a cube with side length 8.

(a) 512   (c) 568

(b) 614   (d) 700

10. What is the length of a side of a square with area 144?

(a) 39   (c) 28

(b) 12   (d) 36

11. What is the remainder when 123456789 is divided by 6?

(a) 6   (c) 5

(b) 3   (d) 8

12. If n! = n(n-1)(n-2)(n-3)………. 3.2.1, then find 6!/4!

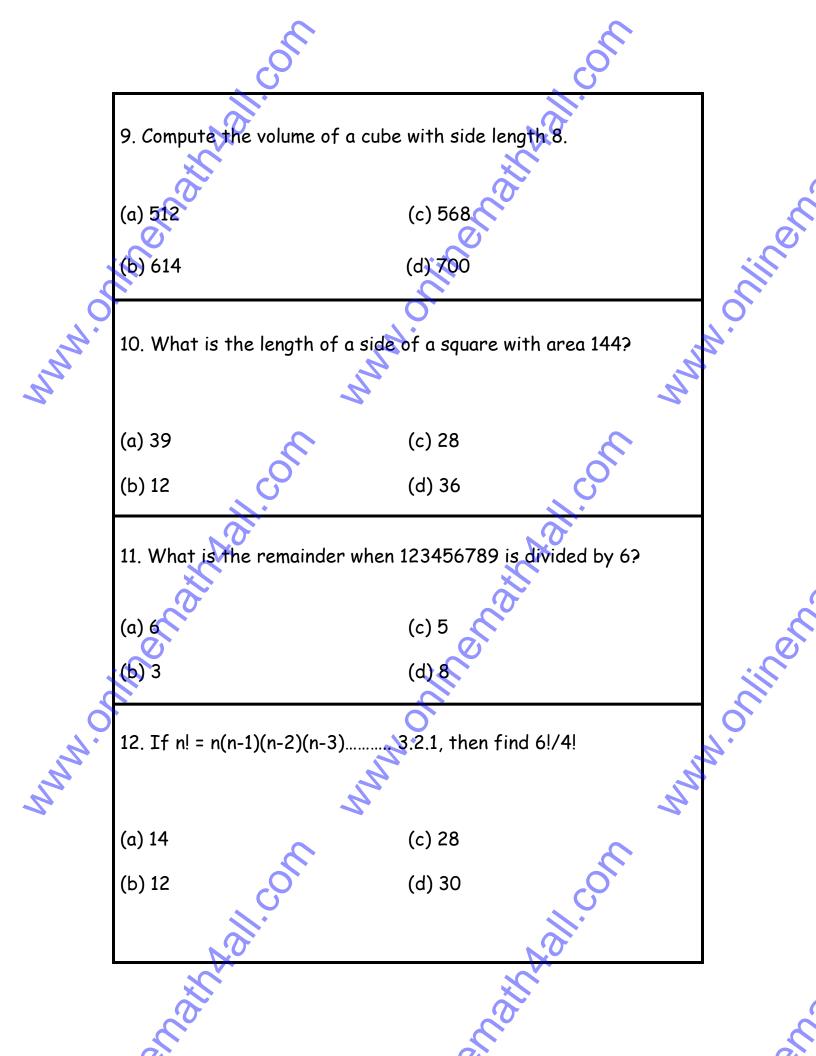(a) 14   (c) 28

(b) 12   (d) 30

13. Jerry writes down one 1, two 2's, three 3's, etc. on a sheet of paper (so the number he writes down will look like 122333...) Find the 30th number that he'll write down.

(a) 3

(b) 6

(c) 4

(d) 8

14. Lily is bored and writes down the numbers -4, -1, 2, 5, ..., 32 where every number she writes down is 3 more than the previous one she wrote down. How many numbers did she write down?

(a) 14

(b) 13

(c) 28
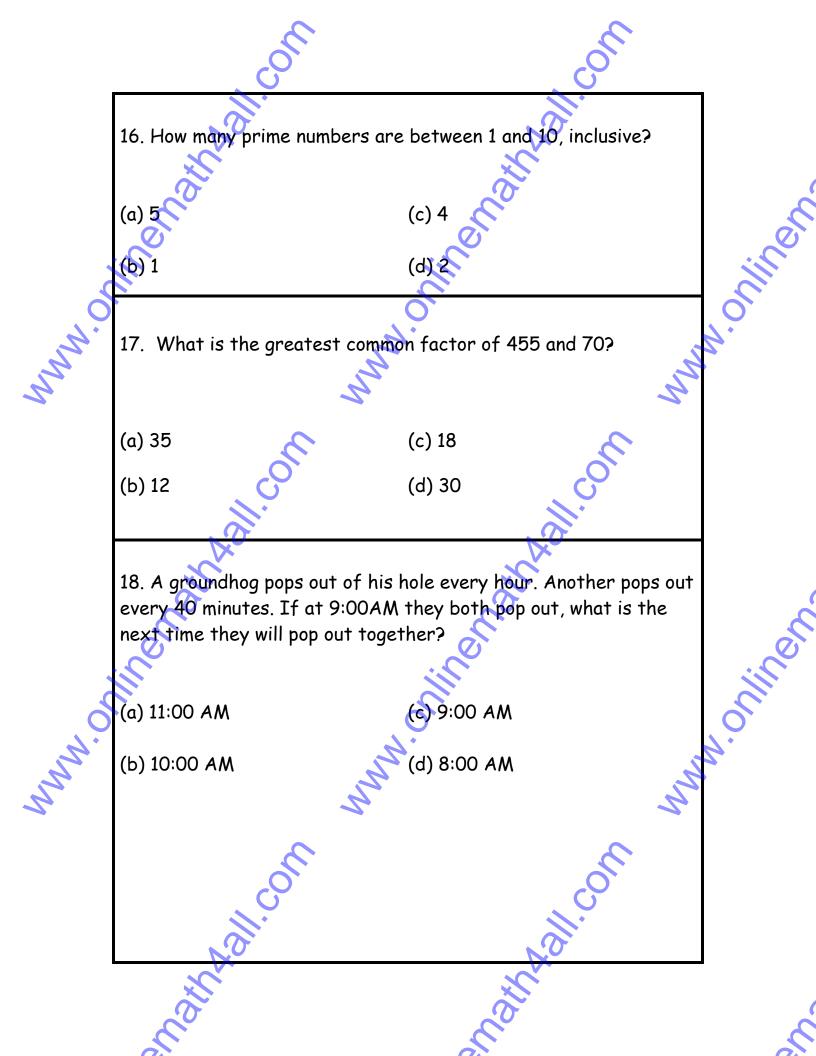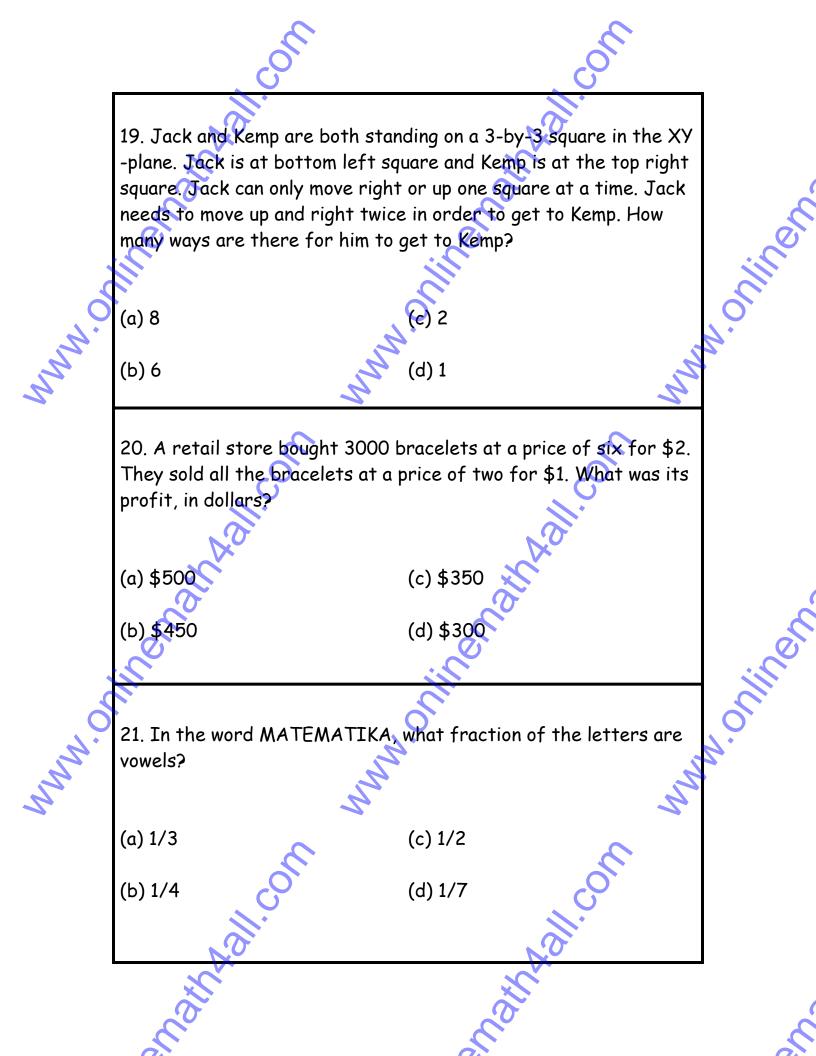
(d) 30

15. John needs some ideas to create problems for the BCA Math Competition, so he decides to walk around his house while he brainstorms. The perimeter of his house is 240 feet, and he walks at a constant speed of 4 feet per second. If John creates 10 problems every time he completes a lap, how many minutes will it take for him to create 250 problems?

(a) 25

(b) 32

(c) 28

(d) 30

16. How many prime numbers are between 1 and 10, inclusive?

(a) 5   (c) 4

(b) 1   (d) 2

17. What is the greatest common factor of 455 and 70?

(a) 35   (c) 18

(b) 12   (d) 30

18. A groundhog pops out of his hole every hour. Another pops out every 40 minutes. If at 9:00AM they both pop out, what is the next time they will pop out together?

(a) 11:00 AM   (c) 9:00 AM

(b) 10:00 AM   (d) 8:00 AM

19. Jack and Kemp are both standing on a 3-by-3 square in the XY-plane. Jack is at bottom left square and Kemp is at the top right square. Jack can only move right or up one square at a time. Jack needs to move up and right twice in order to get to Kemp. How many ways are there for him to get to Kemp?

(a) 8   (c) 2

(b) 6   (d) 1

20. A retail store bought 3000 bracelets at a price of six for $2. They sold all the bracelets at a price of two for $1. What was its profit, in dollars?

(a) $500   (c) $350

(b) $450   (d) $300

21. In the word MATEMATIKA, what fraction of the letters are vowels?

(a) 1/3   (c) 1/2

(b) 1/4   (d) 1/7

22. The product of two distinct positive whole numbers is 17. What is their sum?

(a) 20   (c) 22

(b) 18   (d) 13

23. Compute the number of letters in the alphabet plus the number of days in a week plus number of days in the month of December.

(a) 53   (c) 64

(b) 50   (d) 49

24. If 26 people were on a bus initially, and at the first stop 9 people boarded the bus and 18 people left the bus, how many people are on the bus after the first stop?

(a) 90   (c) 34

(b) 17   (d) 60

25. Calculate 2.71+7.18+1.828.

(a) 9.718

(c) 11.718

(b) 12.718

(d) 10.718

26. How many $0.25 packs of gum can I purchase with $3.33?

(a) 15

(c) 13

(b) 6

(d) 5

27. If History is on channel 64 and Disney is on channel 26, how many times does Kelvin have to hit the "channel down" button in order to switch from History to Disney?

(a) 38

(c) 34

(b) 17

(d) 60

28. Irfan and Jerry are playing a game. Irfan asks Jerry to pick a number. He then asks him to add 26 to that number, multiply his answer by 2, subtract 36 from his new answer, divide that answer by 5, and multiply this answer by 2. If Jerry picks the number 2 in the beginning, what number does he have at the end?

(a) 9   (c) 6

(b) 7   (d) 8

29. Rosy and Keshia live 60 meters away from each other on the same street. They want to plant 5 trees between their houses, evenly spaced out. How far should the distance be from one tree to another?

(a) 9 meters   (c) 10 meters

(b) 11 meters   (d) 8 meters

30. I have one ten dollar bill and two quarters. A water bottle costs $1.75. What is the maximum number of water bottles I can buy?

(a) 6   (c) 5

(b) 9   (d) 10

31. Express 1/16 in decimal form.

(a) 6.25

(c) 0.0625

(b) 0.625

(d) 0.00625

32. Find the number halfway between 1/8 and 1/10

(a) 9/80

(c) 80/9

(b) 11/10

(d) 12/11

33. Find 1111 x 1111.

(a) 1234567

(c) 1234312

(b) 1234321

(d) 12134231

34. Triangle ABC has sides of lengths 4, 5, and 6. Find the perimeter of ABC.

(a) 13

(c) 12

(b) 15

(d) 17

35. I am 5 feet and 4 inches tall. If there are 12 inches in a foot, how tall am I in inches?

(a) 12

(c) 64

(b) 25

(d) 92

36. Compute: (1/6) + (1/9)

(a) 5/21

(c) 5/19

(b) 5/20

(d) 5/18

37. James wrote 12 problems for a math competition so far, but he needs a total of 64. How many more problems must he write?

(a) 48

(c) 52

(b) 46

(d) 55

38. A Chess team has 64 members. If 16 of these players play at least one game in a certain tournament, then what fraction of the team played at least one game in that tournament?

(a) 1/4

(c) 3/5

(b) 2/3

(d) 9/11

39. A Gigantic Lion weighs 1000 pounds. A Gigantic Man can lift up to 260 pounds. How many Gigantic Men are needed to lift this Gigantic Lion?

(a) 7

(c) 3

(b) 5

(d) 4

40. David has 6 apples and 4 bananas. Each apple costs a dollar and each banana costs 50 cents. How many cents did he spend to buy all of them?

(a) 800

(c) 500

(b) 600

(d) 900

41. Amy has 252 gems, 64 of which are sapphires. How many gems does she have that are not sapphires?

(a) 233　　　　　　　　　(c) 216

(b) 188　　　　　　　　　(d) 155

42. Evaluate the following: 26262 + 36363 + 138439.

(a) 201067　　　　　　　(c) 201065

(b) 201066　　　　　　　(d) 201064

43. Compute 6 x 0 x 4 x 0.

(a) 4　　　　　　　　　　(c) 2

(b) 7　　　　　　　　　　(d) 0

44. Aaron and Tai have 2010 Frosted Frakes each. Aaron gives Tai 260 frakes, but Tai gives 640 frakes back to Aaron. How many frakes does Aaron have now?

(a) 3390   (c) 2390

(b) 3339   (d) 2339

45. A section of seats at St. John's Stadium has 30 rows. If each row has 67 seats, then how many seats are in the entire section of seats?

(a) 1010   (c) 1210

(b) 2010   (d) 3210

46. If a Takola steals $73 worth of gold every minute, how much gold does he steal in 5 minutes? Answer in dollars.

(a) $365   (c) $965

(b) $695   (d) $245

47. What is the nonnegative difference of the ones place of 2100 and the ones place of 3100?

(a) 1   (c) 0

(b) 2   (d) 3

48. What is the area of an equilateral triangle with side length 2?

(a) √5   (c) √2

(b) √4   (d) √3

49. At Awesome Math, Mark, instituted a rule where if either of his roommates, Jongwhan or James, forgot to turn off their lights, they had to do 3x - 2 pushups, where x was the xth time either of them neglected to turn off their lights (so if Jongwhan forgot to turn it off, then James forgot, Jongwhan would do 1 pushup and James would do 4). If James didn't turn his lights off the 2nd, 4th, 5th, and 6th times and Jongwhan didn't turn his lights off the 1st, 3rd, and 7th times, how many more pushups did James do than Jongwhan?

(a) 17   (c) 14

(b) 16   (d) 15

50. Kelvin wants to buy a book from Kemp. His encounter with Kemp will be awkward if either Kelvin forgets the money or Kemp forgets the book, but will not be awkward if both of them remember or both of them forget. Given that the chance that Kelvin forgets his money is 60% and the chance that Kemp forgets his book is 10%, find the probability that their encounter will not be awkward.

(a) 36%

(c) 42%

(b) 64%

(d) 57%

Answers					
1. a	2. c	3. d	4. a	5. a	6. c
7. c	8. c	9. a	10. b	11. b	12. d
13. d	14. b	15. a	16. c	17. a	18. a
19. b	20. a	21. c	22. b	23. c	24. b
25. c	26. c	27. a	28. d	29. c	30. a
31. c	32. a	33. b	34. b	35. c	36. d
37. c	38. a	39. d	40. a	41. b	42. d
43. d	44. c	45. b	46. a	47. c	48. d
49. b	50. c				