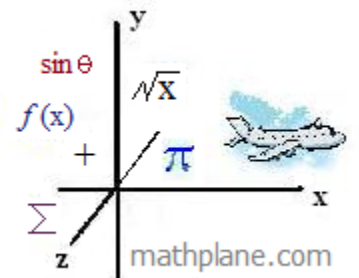# 2014 Puzzle

(And, a solution)

Using 2, 0, 1, 4, and any combination of math symbols/operations, write equations that compute to every number between 1 and 25.

solution: 5 minutes, 12 seconds

Note: Each digit must be used <u>exactly</u> once!

Examples:

0 $\quad = 0 \times 412$

$\quad = 24^0 - 1$

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

2 - 0 - 1 - 4 Hints

(Useful math operations/symbols)

factorials:
$0! = 1$
$3! = 3 \times 2 \times 1 = 6$

greatest integer function (floor function)
$$\lfloor 5.6 \rfloor = 5$$

least integer function (ceiling function)
$$\lceil 5.6 \rceil = 6$$

One SOLUTION -→

Using 2, 0, 1, 4, and any combination of math symbols/operations, write equations that compute to every number between 1 and 25.

solution: 5 minutes, 12 seconds

Note: Each digit must be used <u>exactly</u> once!

Examples:

0    $= 0 \times 412$

     $= 24^0 - 1$

1    $(214)^0$

2    $(\frac{4}{2} + 0) \times 1$

3    $(4 - 1) + (2 \times 0)$

4    $4 + (21 \times 0)$

5    $(1 + 4) - (2 \times 0)$ $\sqrt{4} + 2 + 1 + 0$

6    $(2 + 4) \times 1 + 0$

7    $2 \times 4 - 1 + 0$ $0 + 1 + 2 + 4$

8    $10 - \frac{4}{2}$

9    $(4 - 1)^2 + 0$ $4 + \frac{10}{2}$

10   $(0 + 1 + 2)! + 4$ $3! = 6$

11   $12 - 4^0$

12   $12 + (4 \times 0)$

13   $14 - 2^0$

14   $14 + (2 \times 0)$

15   $20 - 4 - 1$ $4^2 - 1 + 0$

16   $4^2 + (1 \times 0)$

17   $20 - 4 + 1$

18   $10 + (4 \times 2)$

19   $40 - 21$

20   $\frac{10}{2} \times 4$ 20×1^4

21   $21 + (4 \times 0)$

22   $21 + 4^0$

23   $24 - 1 + 0$

24   $24 \times 1 + 0$

25   $(4 + 1)^2 + 0$ $21 + 0 + 4$

****Challenge: Using the same rules, find equations that compute to 26 – 50.

Part 2: Challenge

Using 2, 0, 1, 4, and any combination of math symbols/operations, write equations that compute to every number between 26 and 50.

Note: Each digit must be used <u>exactly</u> once!

Examples:

$0 \quad = 0 \times 412$

$\quad = 24^0 - 1$

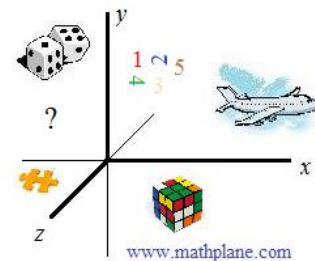|	
26	38
27	39
28	40
29	41
30	42
31	43
32	44
33	45
34	46
35	47
36	48
37	49
	50

Challenge Solution -→

2014

Part 2: Challenge

Using 2, 0, 1, 4, and any combination of math symbols/operations, write equations that compute to every number between 26 and 50.

solution: 21 minutes, 30 seconds

Note: Each digit must be used <u>exactly</u> once!

Examples:

0   $= 0 \times 412$

     $= 24^0 - 1$

26   $(4! + 2 + 0) \times 1$ $4! = 4 \times 3 \times 2 \times 1 = 24$

27   $4! + 2 + 1 + 0$

28   $2 \times 14 + 0$

29   $4! + \dfrac{10}{2}$

30   $\dfrac{4}{.2} + 10$ $\dfrac{4}{.2} = \dfrac{4}{(1/5)} = 20$

31   $4! + (2 + 1)! + 0!$ $3! = 6$ $0! = 1$

32   $42 - 10$

33   $2^{(1+4)} + 0!$ $2^5 = 32$

34   $24 + 10$

35   $40 - \dfrac{1}{.2}$

36   $12 \times (4 - 0!)$

37   $40 - 2 - 1$

38   $40 - 2^1$

39   $40 - 1^2$ $41 - 2 + 0$

40   $40 \times (2 - 1)$

41   $41 + (2 \times 0)$

42   $40 + 2^1$ $21 \times \sqrt{4} + 0$

43   $41 + 2 + 0$

44   $(21 + 0!) \times \sqrt{4}$

45   $4! + 21 + 0$

46   $\dfrac{10}{.2} - 4$
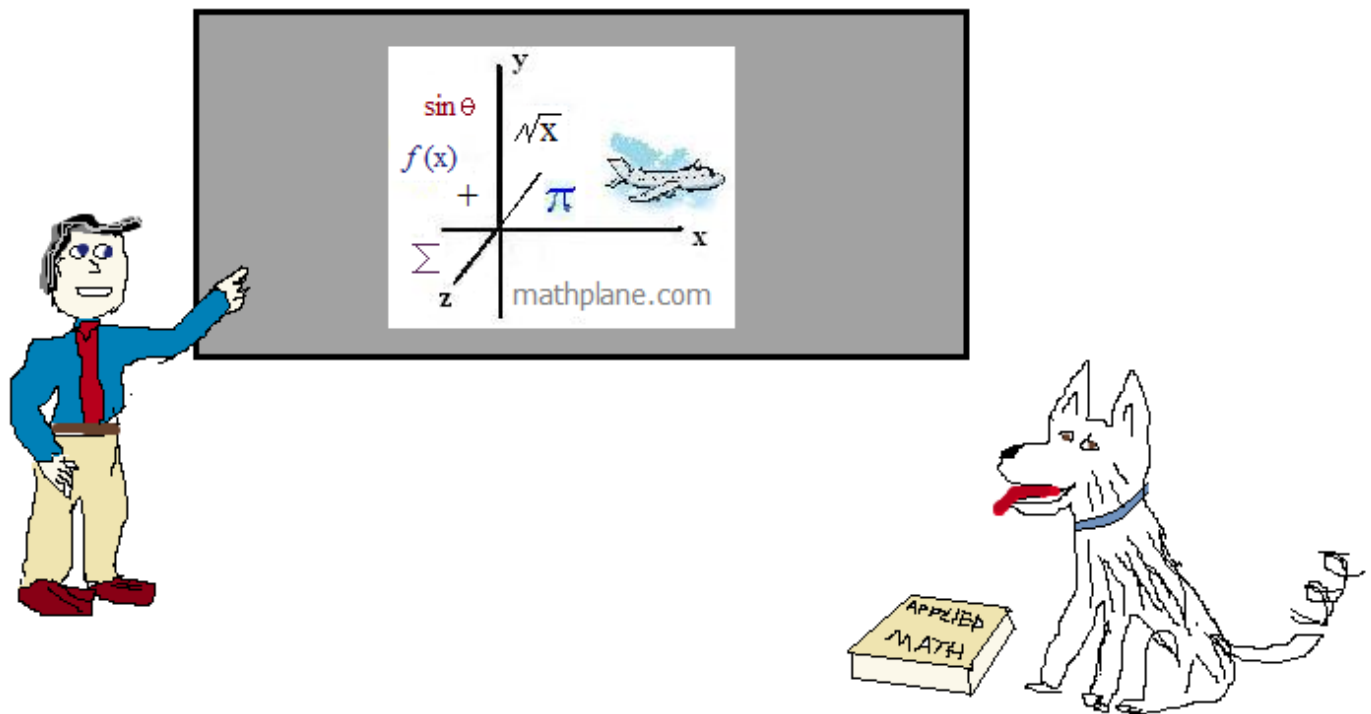
47   $(4! \times 2) - 1 - 0$

48   $(4! \times 2) + (1 \times 0)$

49   $(4! \times 2) + 1 + 0$

50   $2 \times (4! + 1) + 0$

Thanks for visiting.

If you have questions, suggestions, or requests, let us know.

Enjoy!

Also, at Facebook, Google+, and TeachersPayTeachers.com