Holiday Puzzle – Answers

1. Find the value of $2^2 \times 9 + 4$. — 40
   Multiply x 10. — 40 x 10 = 400
   Add 2^4. — 400 + 16 = 416
   Record your result: 416

2. Solve: $7x - 5(x + 4) = 30$ — x = 25
   From this number, subtract the product of (-2) and (-5). — 25 – 10 = 15
   Multiply that answer by the difference between the square of five and the square root of 441. — 15 x (25 – 21) = 60
   Record your result: 60

3. 6 times 10^2 = _____ — 600
   Subtract 5(19 + 29). — 600 – 240 = 360
   Add the number whose prime factorization is $5^2 \times 3$. — 360 + 75 = 435
   Record your result: 435

4. Find ¾ of 32. — 24
   Subtract 2^3. — 24 – 8 = 16
   Reverse the digits and add the largest prime factor of 51. — 61 + 17 = 78
   Record your result: 78

5. Find the 15^{th} term of 1, 4, 9, 16, … — 225 (these are squares)
   From this, subtract 3^4. — 225 – 81 = 144
   Now subtract the product of the third and fourth prime numbers. — 144 – (5 x 7) = 109
   Record your result: 109

6. a^2 b^2 c^2 suggests someone's theorem. How many letters are in his name?
   Multiply that number by the difference between the square of four and the first prime number having two digits.
   Subtract the cube of 3.
   Record your result: 23

   PYTHAGORAS

   10

   10 x (16 – 11) = 50

   50 – 27 = 23

7. Find the only two digit number that is both a perfect square and a perfect cube.
   Add to that number the following two numbers:
   a. Work out 111111^2. The sum of the digits of your answer is ___.
   b. Add the product of the number of prime numbers between 10 and 50 and the number of sides in a pentagon.
   Record your result: 155

   64

   111111^2 = 12345654321

   sum of the digits = 36

   primes: 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

   11 x 5 = 55

   64 + 36 + 55 = 155

	416	60	435	78	109	23	155
	HAP	PY	HOL	ID	AYS	TO	ALL
Arrange your answers:	___	___	___	___	___	___	___
	1	2	3	4	5	6	7

HAPPY HOLIDAYS TO ALL

Message: _____