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# 2014 Taiwan Selection Test for PMWC and EMIC

## Preliminary Round Paper I (Time Allowed : 60 Minutes)

- Write down all answers on the answer sheet.
- Each problem is worth 5 points and the total is 100 points.

1.  $6 \times 72 \times 125 = ?$
2.  $2 + 7 + 27 + 72 + 272 + 727 + 2727 + 7272 = ?$
3.  $5 + 605 + 1605 + 21605 + 721605 = ?$
4.  $(9999 + 11118888 + 22227777 + 33336666 + 44445555 + 55554444 + 66663333 + 77772222 + 88881111 + 99990000) \div 9 = ?$
5.  $93339 \times 87655 + 31113 \times 37035 = ?$
6.  $1.2014 \times 0.3993 + 0.3993 \times 0.7986 + 0.7986 \times 4999 = ?$
7.  $\frac{1 + 2 + 4 + 8 + 16 + 32 + 64 + 128 + 256 + 512}{0.01 + 0.04 + 0.09 + 0.18 + 0.32 + 0.42 + 0.49 + 0.64 + 0.81} = ?$
8.  $201420142014 \times 201420142017 - 201420142015 \times 201420142015 = ?$
9.  $11231 + 12341 + 13451 + 14561 + 15671 + 16781 + 17891 + 18911 + 19121 = ?$
10.  $\frac{1}{7} + \frac{1}{14} + \frac{1}{28} + \frac{1}{31} + \frac{1}{62} + \frac{1}{124} + \frac{1}{248} + \frac{1}{496} = ?$

$$11. \frac{1}{1007 \times 1008} + \frac{1}{1008 \times 1009} + \frac{1}{1009 \times 1010} + \dots + \frac{1}{2013 \times 2014} = ?$$

**12.**  $\frac{1+20+39+58+\cdots+2015}{2+4+6+\cdots+2014} = ?$

**13.**  $1 - \frac{1}{5} - \frac{1}{50} - \frac{1}{500} - \frac{1}{5000} - \frac{1}{50000} - \frac{1}{500000} = ?$

**14.**  $\frac{2014^2 - 1995^2 + 1976^2 - 1957^2 + 1938^2 - 1919^2}{361} = ?$

$$15. \frac{(1+2012)(1+\frac{2012}{2})(1+\frac{2012}{3})\cdots(1+\frac{2012}{2014})}{(1+2014)(1+\frac{2014}{2})(1+\frac{2014}{3})\cdots(1+\frac{2014}{2014})} = ?$$

$$16. (10000 + 2014 \times 2014 + 0.2014)(2014 \times 2014 + 0.2014 + 0.20142014) - (10000 + 2014 \times 2014 + 0.2014 + 0.20142014)(2014 \times 2014 + 0.2014) = ?$$

$$17. \frac{60}{10^2 - 1} + \frac{60}{11^2 - 1} + \frac{60}{12^2 - 1} + \dots + \frac{60}{30^2 - 1} = ?$$

$$18. \frac{2000^2}{1999 \times 2001} + \frac{2002^2}{2001 \times 2003} + \frac{2004^2}{2003 \times 2005} + \frac{2006^2}{2005 \times 2007} + \frac{2008^2}{2007 \times 2009} + \frac{2010^2}{2009 \times 2011} + \frac{2012^2}{2011 \times 2013} + \frac{2014^2}{2013 \times 2015} = ?$$

**19.**  $\frac{1}{150 \times 151 \times 152} + \frac{1}{151 \times 152 \times 153} + \dots + \frac{1}{199 \times 200 \times 201} = ?$