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2008 小學數學競賽選拔賽初賽試題

第一試：計算題（考試時間 1 小時）

◎請將答案填入答案卷對應題號的空格內，不須計算過程。答案若為分數請化為最簡分數。本題目卷正反面空白處可為作演算草稿紙。每題 5 分，共 100 分

1. $16 \times 16 \times 25 \times 125 = 800000$

2. $202 - 204 - 206 + 208 + 210 - 212 - 214 + 216 + \cdots + 2002 - 2004 - 2006 + 2008 = 0$

3. $2008 \times 125 \div (5 \times 5 \times 5 \times 2 + 1) = 1000$

4. $5 \times 7 \times 22 \times 39 \times 49 = 1471470$

5. $48 \times 49 \times 51 \times 52 = 6237504$

6. $3 \times 3 + 4 \times 4 + 30 \times 30 + 40 \times 40 + 300 \times 300 + 400 \times 400 + 3000 \times 3000 + 4000 \times 4000 + 30000 \times 30000 + 40000 \times 40000 = 2525252525$

7. $19 + 208 + 3007 + 40006 + 500005 + 6000004 + 70000003 + 800000002 + 9000000001 = 9876543255$

8. $12 \times 72 \times 162 \times 432 \div 2 \div 3 \div 4 \div 8 \div 9 \div 16 \div 27 \div 81 = 1$

9. $(3 + 9 + 27 + 81 + \cdots + 59049) \times \frac{2}{3} = 59048$

10. $2008 \div 1004 \frac{251}{49} + \frac{(10 \times 10 - 6 \times 6) \div 8}{197} = \frac{400}{197} = 2 \frac{6}{197}$

$$11. \frac{30^2 + 40^2}{125 \times 75 - 25 \times 175} = \frac{1}{2}$$

$$12. 0.375 \times 64 + 168 \div 700 + 15.2 \div 20 - 0.13 \times 3 - 0.2 \times 1.3 = 24.35$$

$$13. \frac{1}{2008} + \frac{1}{1004} + \frac{1}{502} + \frac{1}{251} + \frac{1}{8} + \frac{1}{4} + \frac{1}{2} + 1 = \frac{945}{502} = 1\frac{443}{502}$$

$$14. 2008 \times \left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \cdots \times \left(1 + \frac{1}{1000}\right) = 1005004$$

$$15. \left(16 + \frac{7}{20} - \frac{2}{5}\right) \times \left(\frac{1}{2008} + \frac{1}{28}\right) - \left(\frac{1}{2008} + \frac{1}{28}\right) \times \left(15 + \frac{23}{20}\right) + \left(\frac{1}{2008} + \frac{1}{28}\right) \times \left(1 - \frac{4}{5}\right) = 0$$

$$16. \frac{1 + 2 + 3 - 5 + 6 + 7 + 8 - 10 + \cdots + 5001 + 5002 + 5003 - 5005}{7 \times 9 \times 11 \times 13} = \frac{1667}{3} = 555\frac{2}{3}$$

$$17. \left(2 + \frac{37}{73} \times 512\right) + \left(4 + \frac{37}{73} \times 256\right) + \left(8 + \frac{37}{73} \times 128\right) + \cdots + \left(512 + \frac{37}{73} \times 2\right) = 1540$$

$$18. \frac{251}{4 \times 8} + \frac{251}{8 \times 12} + \frac{251}{12 \times 16} + \cdots + \frac{251}{2000 \times 2004} + \frac{251}{2004 \times 2008} = \frac{501}{32} = 15\frac{21}{32}$$

$$19. \frac{(80.8 + 0.0\bar{8}) \times 9}{7 \times 11 \times 13} = \frac{8}{11}$$

註：0.0 $\bar{8}$ 是循環小數，即0.0 $\bar{8}$ =0.08888...，下題亦同。

$$20. 0.\overline{142857} + 0.\overline{285714} + 0.\overline{428571} + 0.\overline{571428} + 0.\overline{714285} + 0.\overline{857142} = 3$$