

# 2009 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.  $555 \times 666 = 369630$

2.  $702 + 704 + 706 + \dots + 798 + 800 - 799 - 797 - 795 - \dots - 703 - 701 = 50$

3.  $11 \times 125 + 55 \times 25 + 275 \times 5 + 1375 = 5500$

4.  $(1 + 2 + 3 + 5 + 6 + 7 + 8 + 9) \times (1 + 2 + 3 + 4 + 4 + 5 + 6 + 7 + 8 + 9) = 2009$

5.  $2 \div 3 \times 4 \div 5 \times 6 \div 7 \times 8 \div 9 \times 10 \div 11 \times 12 \div 13 \times 91 \times 99 = 3072$

6.  $(9292 + 9290 + 9288 + \dots + 9002) - (2 + 4 + 6 + \dots + 292) = 1314000$

7.  $2009 \times 41 \times 49 \div 343 - 287 - 280 = 11200$

8.  $144 \times 144 - 2 \times 144 \times 44 + 44 \times 44 = 10000$

9.  $199 \times 201 \times [(198 \times 199 + 198 \times 201 + 199 \times 202 + 201 \times 202) \div 4 + 1] = 1599999999$

10.  $1 + 101 + 10201 + 1020301 + 102030401 + 10203040501 + 1020304050601 +$   
 $102030405060701 + 10203040506070801 + 1020304050607080901 =$   
 $1030610152128364510$

(請翻面繼續)

$$11. (2009 \times 41 - 2009 \div 41) \div 5 \div 6 \div 7 \div 8 = 49$$

$$12. \frac{45 \times 45 - 4 \times 4}{2009 \times 3 \times 21} = \frac{1}{63}$$

$$13. \frac{1}{5} \times 512 + \frac{6}{15} \times 256 + \frac{36}{45} \times 128 + 1 \frac{9}{15} \times 64 + 3 \frac{1}{5} \times 32 = 512$$

$$14. 4 \times (0.14 + 0.28) \times \frac{21}{50} + 4 \times 0.56 \times 0.56 = 1.96 \text{ or } 1 \frac{24}{25} \text{ or } \frac{49}{25}$$

$$15. \frac{1+2+3+4+5+6+7+8+9+10+9+8+7+6+5+4+3+2+1}{3333 \times 6666 + 4444 \times 8888} = \frac{2}{1234321}$$

$$16. 111 \frac{1}{2} \times 111 \frac{1}{2} \times 222 \frac{1}{2} \times 444 \frac{1}{2} \times 555 \frac{1}{2} - 111 \frac{1}{2} \times 222 \frac{1}{2} \times 222 \frac{1}{2} \times 444 \frac{1}{2} \times 555 \frac{1}{2} \\ - 111 \frac{1}{2} \times 222 \frac{1}{2} \times 444 \frac{1}{2} \times 444 \frac{1}{2} \times 555 \frac{1}{2} + 111 \frac{1}{2} \times 222 \frac{1}{2} \times 444 \frac{1}{2} \times 555 \frac{1}{2} \times 555 \frac{1}{2} = 0$$

$$17. \left(2 - \frac{1}{2}\right) \times \left(2 - \frac{1}{3}\right) \times \left(2 - \frac{1}{4}\right) \times \cdots \times \left(2 - \frac{1}{100}\right) \times \frac{2}{199} \times \frac{4}{197} \times \frac{6}{195} \times \cdots \times \frac{100}{101} \times \frac{102}{99} = \frac{34}{33}$$

$$18. \frac{\frac{1}{5} + \frac{1}{10} + \frac{1}{20} + \frac{1}{40} + \frac{1}{80} + \cdots + \frac{1}{10240}}{0.2 \times \frac{1}{2} + 0.2 \times \frac{1}{3} + 0.2 \times \frac{1}{6}} = 1 \frac{2047}{2048} \text{ or } \frac{4095}{2048} \text{ or } 1.99951171875$$

$$19. \frac{1}{7 + \frac{1}{6 + \frac{1}{5 + \frac{1}{4 + \frac{1}{3 + \frac{1}{2 + \frac{1}{1}}}}}}}} = \frac{1393}{9976}$$

$$20. \frac{1}{2} + \frac{1}{4} + \frac{2}{4} + \frac{3}{4} + \frac{1}{8} + \frac{2}{8} + \frac{3}{8} + \frac{4}{8} + \frac{5}{8} + \frac{6}{8} + \frac{7}{8} + \cdots + \frac{1}{512} + \frac{2}{512} + \frac{3}{512} + \cdots + \frac{511}{512} = \\ 506 \frac{1}{2} \text{ or } \frac{1013}{2} \text{ or } 506.5$$