

# Daily Mental Math

Grade  
9

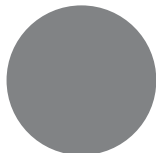



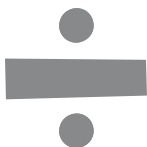







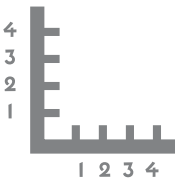










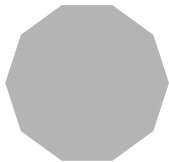

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

Dr. Anne Paterson

## Foreword

The *Daily Mental Math* series has been designed to help students improve both their speed and accuracy of recall of important mathematical facts and terminology as they progress through Grades 8–10.

Most adults choose mental methods when calculating in their daily lives. To provide a reason to calculate, many questions in this series have been posed in real-life contexts. The context in which a question is posed will also help students to judge the reasonableness of their answer.

Four days of mental math questions have been provided for each week, since this fits most school schedules. Daily practice of around 10–15 minutes is highly recommended. The emphasis should first be on building accuracy and then on improving speed.

The questions for each day have been organized so that similar types of questions are presented together. Each concept is introduced within a framework of repetitive questions with slight variations to help students become familiar with the patterns and relationships that occur for that concept. Some items are presented alongside their inverses to highlight the relationships between concepts; for example,  $\sqrt{625} = \square$  and  $25^2 = \square$ .

Used daily, the *Daily Mental Math* series gives students the practice they need to develop strong mental math and problem-solving skills.

## Contents

Week 1 .....	2–3	Week 21 .....	42–43
Week 2 .....	4–5	Week 22 .....	44–45
Week 3 .....	6–7	Week 23 .....	46–47
Week 4 .....	8–9	Week 24 .....	48–49
Week 5 .....	10–11	Week 25 .....	50–51
Week 6 .....	12–13	Week 26 .....	52–53
Week 7 .....	14–15	Week 27 .....	54–55
Week 8 .....	16–17	Week 28 .....	56–57
Week 9 .....	18–19	Week 29 .....	58–59
Week 10 .....	20–21	Week 30 .....	60–61
Week 11 .....	22–23	Week 31 .....	62–63
Week 12 .....	24–25	Week 32 .....	64–65
Week 13 .....	26–27	Week 33 .....	66–67
Week 14 .....	28–29	Week 34 .....	68–69
Week 15 .....	30–31	Week 35 .....	70–71
Week 16 .....	32–33	Week 36 .....	72–73
Week 17 .....	34–35	Week 37 .....	74–75
Week 18 .....	36–37	Week 38 .....	76–77
Week 19 .....	38–39	Week 39 .....	78–79
Week 20 .....	40–41	Week 40 .....	80–81
		Student Record Sheet .....	82

# Week 1

## Day 1

1.  $\sqrt{0.04} =$  \_\_\_\_\_
2.  $0.1 + 0.1 =$  \_\_\_\_\_
3.  $0.1 - 0.1 =$  \_\_\_\_\_
4.  $0.1 \times 0.1 =$  \_\_\_\_\_
5.  $0.1 \div 0.1 =$  \_\_\_\_\_
6.  $1 \times 100^2 =$  \_\_\_\_\_
7.  $\$40 - \$2.85 =$  \_\_\_\_\_
8. Find the **mean** (average) for the set: 13, 14, 15, 16, 17. \_\_\_\_\_
9. At what **degree** angle do **perpendicular lines** meet? \_\_\_\_\_
10. \_\_\_\_\_ + \_\_\_\_\_ =  $1\frac{1}{2}$
11. How many **faces** are there on a **tetrahedron**? \_\_\_\_\_
12. Six friends win \$1000 in a competition. They share this money equally. Each friend gets a whole dollar amount and a small amount is left over. How much does each friend get and how much is left over?  
\_\_\_\_\_
13. **Simplify**  $20 : 30 : 40$ . \_\_\_\_\_
14. **Expand**  $10(a + 3)$ . \_\_\_\_\_
15. The **sum** of the number  $n$  and 15 is \_\_\_\_\_.
16. Twenty-five percent of \$200 is \_\_\_\_\_.
17. Four less than  $x$  is \_\_\_\_\_.
18. If a recipe calls for 300 mL water for 500 g of flour, how much water is needed for 750 g of flour? \_\_\_\_\_ mL
19.  $\frac{1}{2}$  of 1% is \_\_\_\_\_.
20.  $15 + 10 - 7 =$  \_\_\_\_\_

Score: /20 %

## Day 2

1. Can  $\sqrt{2}$  be a **whole number**? **Yes** **No**
2.  $0.1 + 0.2 =$  \_\_\_\_\_
3.  $0.1 - 0.2 =$  \_\_\_\_\_
4.  $0.1 \times 0.2 =$  \_\_\_\_\_
5.  $0.1 \div 0.2 =$  \_\_\_\_\_
6.  $1.0 \times 100^2 =$  \_\_\_\_\_
7.  $\$16.20 + \$14.90 =$  \_\_\_\_\_
8. Find the **median** (average) for the set: 13, 14, 15, 16, 17. \_\_\_\_\_
9. Two **tetrahedrons** joined face-to-face make a \_\_\_\_\_.
10. Name any of the five **platonic solids**.  
\_\_\_\_\_
11. \_\_\_\_\_ - \_\_\_\_\_ =  $1\frac{1}{2}$
12. Find the **ratio** of chocolate to puffed rice in this recipe: 250 g chocolate, 50 g puffed rice, 50 g butter, 50 g golden syrup.  
\_\_\_\_\_
13. **Simplify**  $21 : 14 : 42$ . \_\_\_\_\_
14. **Expand**  $5(c + 6)$ .  
\_\_\_\_\_
15. **Subtract** five from the **product** of  $m$  and  $n$ .  
\_\_\_\_\_
16. **Reduce** \$250 by 40%. \_\_\_\_\_
17. **Factor**  $3pq - 6p^2$ . \_\_\_\_\_
18. **Express** 8 and  $y$  shared among four people.  
\_\_\_\_\_
19.  $\frac{1}{4}$  of 1% is \_\_\_\_\_.
20.  $400 - 4 \times 9 =$  \_\_\_\_\_

Score: /20 %

# Week 1

## Day 3

- $\sqrt{0.09} =$  \_\_\_\_\_
- $0.01 + 0.03 =$  \_\_\_\_\_
- $0.1 - 0.3 =$  \_\_\_\_\_
- $0.1 \times 0.3 =$  \_\_\_\_\_
- Express  $0.1 \div 0.3$  as a **fraction**. \_\_\_\_\_
- $36 \times 100 =$  \_\_\_\_\_
- The usual notation for **one and a half dollars** is \_\_\_\_\_.
- The **range** of the set 12, 13, 13, 13.5, 14, 16, 16.5, 17 is \_\_\_\_\_.
- Find the **circumference** of a circular sign if the **diameter** of the circle is 14 in. (Use  $\pi = 3.14$ ).  
\_\_\_\_\_
- Find the **surface area** of a **cube** with sides 2 cm long. \_\_\_\_\_
- The **prefix** for the value  $10^3$ , whose **symbol** is **k**, is \_\_\_\_\_.
- What is a **protractor** used to measure?  
\_\_\_\_\_
- Simplify**  $22 : 33 : 44$ . \_\_\_\_\_
- Expand**  $4(a + 3)$ . \_\_\_\_\_
- $12 +$  \_\_\_\_\_  $= 25$
- Find 30% of \$900. \_\_\_\_\_
- Write "five times the sum of 3 and  $m$ " as an **algebraic expression**. \_\_\_\_\_
- If tennis balls cost \$2 each or \$7 for a can of four, how many cans must be bought to get one ball free? \_\_\_\_\_
- Write **1.95 million** in numerals.  
\_\_\_\_\_
- If  $r = 12$ , find the value of  $r - 7$ . \_\_\_\_\_

Score: /20 %

## Day 4

- $\sqrt{0.16} =$  \_\_\_\_\_
- $0.1 + 0.4 =$  \_\_\_\_\_
- $0.1 - 0.4 =$  \_\_\_\_\_
- $0.1 \times 0.4 =$  \_\_\_\_\_
- Express  $0.1 \div 0.4$  as a **decimal**. \_\_\_\_\_
- $45 \times 100 =$  \_\_\_\_\_
- The usual notation for **one and a quarter dollars** is \_\_\_\_\_.
- The **mode** (average) for the set of scores: 11, 11, 12, 12, 12, 13, 15 is  
\_\_\_\_\_.
- Find the **surface area** of a street sign with a **width** of 14 in. and **length** of 24 in.  
\_\_\_\_\_
- Find the **surface area** of a cube with sides 1 cm long. \_\_\_\_\_
- The **prefix** for the value  $10^6$ , whose symbol is **M**, is \_\_\_\_\_.
- What can a **compass** be used to measure?  
\_\_\_\_\_
- Simplify**  $25 : 50 : 75$ . \_\_\_\_\_
- Expand**  $3(a + 4)$ . \_\_\_\_\_
- $20 -$  \_\_\_\_\_  $= 18$
- Reduce** \$250 by 20%. \_\_\_\_\_
- Name the mathematical instrument used to draw **circles**. \_\_\_\_\_
- If fudge is sold at a **price** of four pieces for \$5 or \$1.20 per piece, which is the better deal?  
(a) 4 for \$5 (b) \$1.20 per piece
- Write 400 million in **scientific notation**.  
\_\_\_\_\_
- If  $f = 3$ , find the value of  $f^2$ . \_\_\_\_\_

Score: /20 %