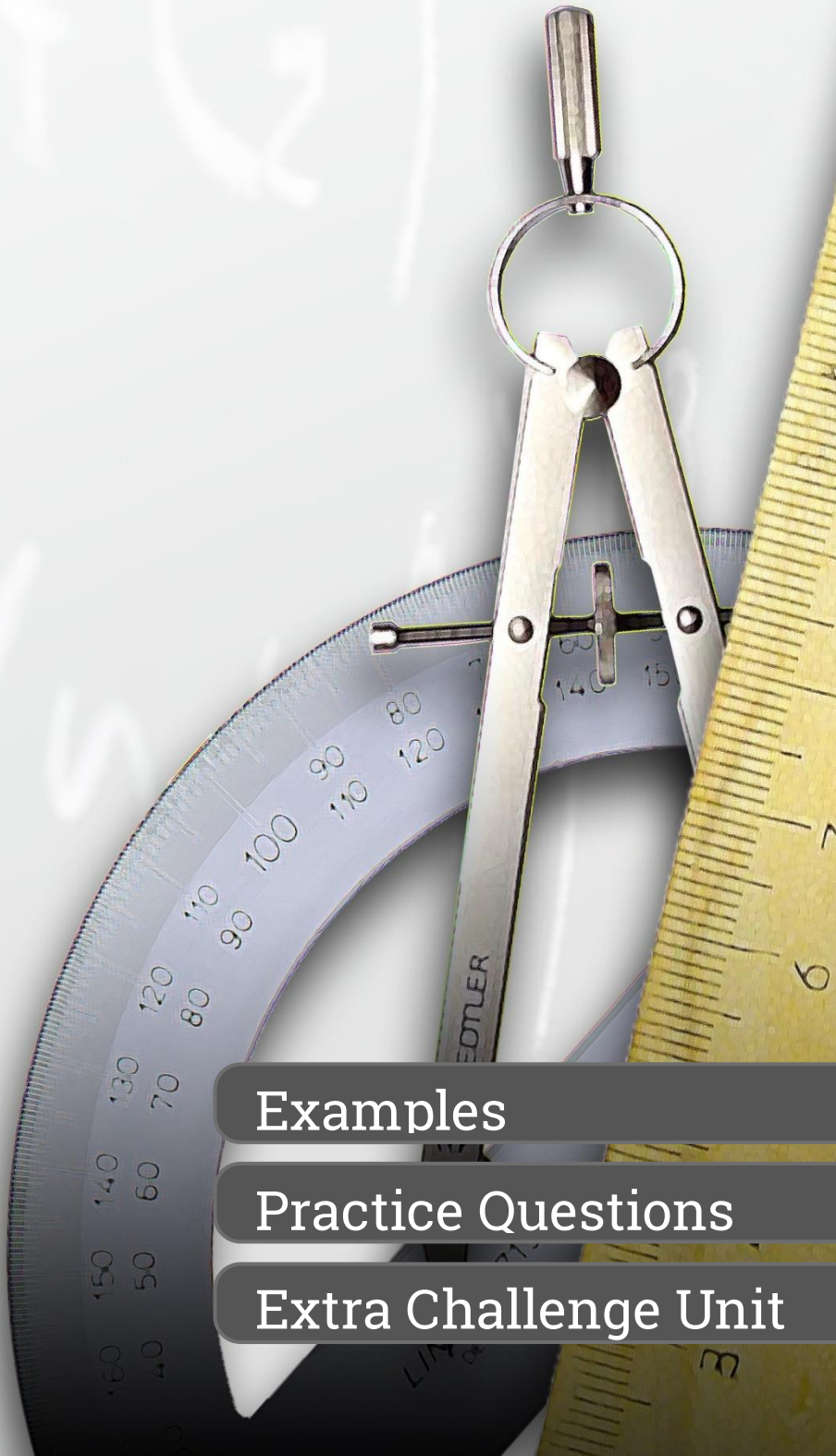
Grade 5 – Lesson 2

Math Practice Sheets

Add and Subtract Whole Numbers and Decimals Part I



- Examples
- Practice Questions
- Extra Challenge Unit

Student Name

_____

Unit 2.1

Mental Math on Addition and Subtraction

Example

You can use mental math to add or subtract.
Commutative and associative properties simplify addition and subtraction.

Commutative Property of Addition: Change of order of addends does not change the sum. i.e. 2 + 3 = 5 and 3 + 2 = 5 ⇨ 2 + 3 = 3 + 2

Associative Property of Addition: Changing the group of addends does not change the sum. i.e. 4 + (6 + 7) = 4 + 13 = 17 and (4 + 6) + 7 = 10 + 7 = 17 ⇨ 4+(6+7) = (4+6)+7

Sometimes you can use compensation to add or subtract.

Find 48 + 36 mentally.

50 + 36 = 86

2 more than 48

So, the final answer is 2 less than 86.

48 + 36 = 84

Find 94 - 27 mentally.

94 - 30 = 64

3 more than 27

So, the final answer is 3 less than 64.

94 - 27 = 61

Exercise

1. Add or subtract using mental math.

a) 27 + 14 + 3

b) 85 + 26 + 4

c) 38 + 26

d) 73 - 37

e) 62 + 14 + 8

f) 92 - 45

Unit 2.1

Mental Math on Addition and Subtraction

Exercise

g) 2,004 + 73

h) 302 - 88

i) 130 + 234 + 70

j) 98 + 35 + 2

k) 77 - 49

l) 345 + 19 + 5 + 1

m) 699 + 27 + 1 + 3

n) 875 - 290

Unit 2.1

Mental Math on Addition and Subtraction

Exercise

Solve the problems below.

2. There are 34 mangoes, 15 apples, and 6 bananas in a kitchen. How many fruits are there in total? Use mental math to find the sum.

3. 72 students are at a playground. If 29 students are girls, how many boys are there? Use compensation to subtract.

4. $10 + (7 + 8) = (10 + 7) + 8$ is known as the _____ property of addition.

   a) Associative b) Identity

   c) Commutative d) Inverse

5. Jolene says the number missing in ____ + 65 = 65 is 0. Is she correct? Explain.

6. Fill in the blanks and solve. Use associative property of addition.

   _____ + (33 + 12) = (10 + _____) + 12

   _____ = _____

   _____ = _____

Unit 2.2

Addition and Subtraction Problem Solving

Example

Add: 100,272,780 and 24,892,720

```
      1 1   1 1   <- Carry-overs
  1 0 0,2 7 2,7 8 5
+   2 4,8 9 2,7 2 0
-----------------------
  1 2 5,1 6 5,5 0 5
```

Add: 7,829 and 8,234

7,829 + 8,234

= 16,063

First add ones, then tens, hundreds, thousands etc from right to left.

Subtract: 12,827,956 from 240,782,121

```
      3  9 17  7 11 10 11 11   <- Regrouping
  2 4 0,7 8 2,1 2 1
-   1 2,8 2 7,9 5 6
-----------------------
  2 2 7,9 5 4,1 6 5
```

Subtract: 72,893 from 4,357,123

4,357,123 - 72,893

= 4,284,230

First subtract ones, then tens, hundreds etc and regroup if necessary.

Exercise

1. Add or subtract using mental math.

a)

```
    91,840
+    7,569
-----------
```

b)

```
    4,892
-   1,948
-----------
```

c)

```
    32,718,905
+   85,031,075
---------------
```

d) 35,789 + 120,351

e)

```
    68,732,974
-      287,284
---------------
```

f) 948,278 - 10,998

Unit 2.2

Addition and Subtraction Problem Solving

Exercise

g)

$$\begin{array}{r} 24{,}872{,}709 \\ +\ 3{,}444{,}207 \\ \hline \end{array}$$

h) 234,560 + 4,444

i) 724,831 - 27,089

j)

$$\begin{array}{r} 8{,}924{,}720 \\ -\ 421{,}348 \\ \hline \end{array}$$

k)

$$\begin{array}{r} 12{,}407{,}289 \\ 258{,}721 \\ +\ 4{,}512{,}720 \\ \hline \end{array}$$

l) 12,749 + 7,203,481

m) 483,092 - 99,867

n)

$$\begin{array}{r} 11{,}278{,}420 \\ -\ 7{,}124{,}829 \\ \hline \end{array}$$

o)

$$\begin{array}{r} 35{,}712{,}492 \\ 291{,}840 \\ +\ 1{,}478{,}271 \\ \hline \end{array}$$

p)

$$\begin{array}{r} 1{,}374{,}021{,}278 \\ -\ 6{,}010{,}538 \\ \hline \end{array}$$

Unit 2.2

Addition and Subtraction Problem Solving

Exercise

Solve the problems below.

2. In a garden, there are 24,928 bananas, 58,920 apples, and 134,560 oranges. How many fruits are in the garden?

3. The number of nickels, dimes, and quarters in a bank is 3,472,950; 3,501,200; and 67,109,300 respectively. Find the total number of the coins.

4. The population of a city is 348,702. If 168,924 are male, find the number of female.

a) 279,778 b) 179,778

c) 479,778 d) 517,626

5. Out of 34,492,230 pens stock in a store; 67,845 are damaged. How many pens are not damaged?

6. In a school, there are 35 students in class four and 40 students in class five. If the total number of girls in these two classes is 50, find the total number of boys.

Unit 2.3

Addition Properties

Example

Some properties of addition:

a) Identity Property of Addition:

Addition of a number with zero is the same number.

i.e. 7 + 0 = 7

0 + 555 = 555

b) Inverse Property of Addition:

In any number a, (+a) is the additive inverse of (-a) and (-a) is the additive inverse of (+a) where (+a) + (-a) = 0.

i.e. (+2) + (-2) = 0

(-100) + (+100) = 0

c) Commutative Property of Addition:

Changing the order of the addends does not change the sum.

i.e. 20 + 30 = 50 30 + 20 = 50

∴ 20 + 30 = 30 + 20

d) Associative Property of Addition:

Change of the group of addends does not change the sum. i.e.

40 + (60 + 70) = 40 + 130 = 170

(40 + 60) + 70 = 100 + 70 = 170

∴ 40 + (60 + 70) = (40 + 60) + 70

Exercise

1. Which property of addition is illustrated by each of these sentences?

a) (+95) + (-95) = 0 _____ Property

b) 75 + 93 = 93 + 75 _____ Property

c) (64 + 17) + 30 = 64 + (17 + 30) _____ Property

d) 2,000 + 0 = 2,000 _____ Property

e) (-888) + (+888) = 0 _____ Property

Unit 2.3

Addition Properties

Exercise

2. Use the properties of addition to solve each of the following.

a)

34 + _____ = 25 + 34

or, _____ = _____

b)

11 + (12 + 13) = (11 + 12) + 13

or, 11 + _____ = _____ + 13

or, _____ = _____

c)

27 + 90 = 90 + _____

or, _____ = _____

d)

150 + (66 + 52) = (150 + 66) + 52

or, 150 + _____ = _____ + 52

or, _____ = _____

3. Fill in the blanks and solve.

a)

44 + _____ = 33 + _____

or, _____ = _____

b)

0 + 25 = _____ + 0

or, _____ = _____

c)

(8 + 7) + 9 = 8 + (_____ + 9)

or, _____ + _____ = _____ + _____

or, _____ = _____

d)

(+28) + (_____) = 0

or, _____ = _____

e)

_____ + 14 = _____ + 36

or, _____ = _____

f)

(40 + ___) + 60 = ___ + (30 + 60)

or, _____ + _____ = _____ + _____

or, _____ = _____

Unit 2.3

Addition Properties

Exercise

Solve the problems below.

4. (a + b) + c = a + (b + c) is called the _____ property of addition.

5. Which two numbers in the box | 2 | 6 | 45 | 50 | have sum of 51?

6. Which two numbers in the box | 10 | 32 | 52 | 64 | have difference of 32?

7. Which one is true?

   a) (-35) + (-35) = 0

   b) 7 + 3 = 3 - 7

   c) 2 + (8 + 5) = (2 - 8) + 5

   d) 250 - 0 = 250

8. Fill in the missing digits.

$$\begin{array}{r} \square\,1\;\;9,\square\,6\;\;5 \\ +\quad \square\;3,8\;\square\,9 \\ \hline 3\;\;4\square,2\;\;4\;\square \end{array}$$

9. Fill in the blanks and solve. Which property did you use? Explain.

   _____ + (33 + _____) = (22 + _____) + 44

Unit 2.4

Rounding Whole Numbers and Decimals

Example

A large number may be rounded off to the nearest 10, 100, 1,000, 10,000, or 100,000 etc.

Suppose while rounding off to the nearest 100, if the digit in the tens place is between 0 to 4, i.e. < 5, then the tens place is replaced by 0. If it is 5 to 9, i.e. ≥ 5, then the tens place is replaced by '0' and the hundred place is increased by 1.

So, 5,834 → 5,800 ∵ 3 < 5

892,385 → 892,400 ∵ 8 > 5

48,651 → 48,700 ∵ tens digit is 5.

The same procedures are followed to round off large numbers to any place.

We can round decimal number 4.17 to the nearest tenth using the above procedure.

i.e. 4.17 → 4.2 ∵ 7 > 5

Exercise

1. Round each of the following whole numbers to the place occupied by the underlined digit.

a) 1̲4

b) 3̲6

c) 5̲88

d) 7̲44

e) 2,96̲5

f) 6,0̲61

g) 48̲,730

h) 91,4̲56

i) 65̲4,321

j) 70̲3,999

Unit 2.4

Rounding Whole Numbers and Decimals

Exercise

2. Round each of the following decimal numbers to the place occupied by the underlined digit.

a) 2<u>7</u>.4

b) 8.<u>1</u>6

c) 0.4<u>5</u>6

d) 0.<u>8</u>91

e) 615.<u>2</u>07

f) 94.0<u>0</u>6

g) 70<u>2</u>.591

h) 453.<u>0</u>42

i) 0.6<u>1</u>53

j) 16.0<u>0</u>3

3. Round the following numbers to the nearest 100, 1,000, and 1,000,000.

	Numbers	Nearest 100	Nearest 1,000	Nearest 1,000,000
a)	57,364,528			
b)	141,526,170			
c)	825,641,852			
d)	362,854,119			
e)	6,317,295,607			

Unit 2.4

Rounding Whole Numbers and Decimals

Exercise

Solve the problems below.

4. The average daily temperature in July in Fort Worth, Texas is 85.3^0 F. Round the temperature to the place occupied by the underlined digit.

5. A shark tank holds 236,000 liters of water. Round this number to the nearest ten thousand.

6. 27,615,483,716 27,615,000,000 shows rounding to the nearest

a) Hundred Thousands

b) Ten Millions

c) Millions

d) Ten Thousands

7. The Spain had 38,646,800 cell phone users in 2006. Round the number of cell phone users to nearest hundred thousand users.

8. The American cockroach is 3.576 centimeters long. What is 3.576 when rounded to the nearest ones place? To the nearest tenth place?

Unit 2.5

Estimating Sums and Differences

Example

Estimate the sum.

$$\begin{array}{rcl} 1,764 & \longrightarrow & 2,000 \\ +\ 6,105 & \longrightarrow & +\ 6,000 \\ \hline & & 8,000 \end{array}$$

Estimate the difference.

$$\begin{array}{rcl} 1,425 & \longrightarrow & 1,400 \\ -\ \ 287 & \longrightarrow & -\ \ 300 \\ \hline & & 1,100 \end{array}$$

Round each number to the highest place value the numbers have in common then add or subtract as directed in the problem.

We can also estimate the sum or the difference in decimal numbers.

Estimate: 67.2 + 4.9

$$\begin{array}{rcl} 67.2 & \longrightarrow & 67 \\ +\ \ 4.9 & \longrightarrow & +\ \ 5 \\ \hline & & 72 \end{array}$$

i.e. 67.2 + 4.9 is about 72.

Estimate: 24.8 - 19.3

$$\begin{array}{rcl} 24.8 & \longrightarrow & 25 \\ -\ 19.3 & \longrightarrow & -\ 19 \\ \hline & & 6 \end{array}$$

i.e. 24.8 - 19.3 is about 6.

Exercise

1. Estimate the sums or differences of each of the following whole numbers.

a)

$$\begin{array}{rcl} 632 & \longrightarrow & \\ +\ 579 & \longrightarrow & \\ \hline & & \end{array}$$

b)

$$\begin{array}{r} 4,281 \\ -\ 1,655 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 8,501 \\ +\ 3,105 \\ \hline \end{array}$$

d)

$$\begin{array}{r} 7,195 \\ -\ 4,444 \\ \hline \end{array}$$

e) 9,715 - 5,157

f) 3,425 + 888

Unit 2.5

Estimating Sums and Differences

Exercise

2. Estimate the sum or difference of the following decimal numbers.

a)

$$\begin{array}{r} 6.8 \\ -\ 2.3 \\ \hline \end{array}$$

b)

$$\begin{array}{r} 9.24 \\ -\ 3.71 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 7.7 \\ 4.1 \\ +\ 5.8 \\ \hline \end{array}$$

d)

$$\begin{array}{r} 48.2 \\ -\ 19.7 \\ \hline \end{array}$$

e) $26.3 - $8.8

f) $3.20 + $6.15 + $9.90

3. Estimate the following sum or difference of each of the following.

a)

$$\begin{array}{r} 68,735 \\ +\ 9,543 \\ \hline \end{array}$$

b)

$$\begin{array}{r} 26,555 \\ -\ 9,715 \\ \hline \end{array}$$

c) $9.15 + $37.50 + $4.99

d) $72.8 - $14.9

e) 81,724 + 26,105

f) 93,625 - 5,199

Unit 2.5

Estimating Sums and Differences

Exercise

Solve the problems below.

4. There are 12,245 Math books and 17,654 English books in a library. About how many books are there in total? Round each number to the highest place value the numbers have in common. Then estimate the sum.

5. The rainfall in the city of Boise ID in a typical year is 12.19 inches and the rainfall in Spring Field, MO is 44.97 inches. Find the difference in the rainfall between the two cities.

6. Chris and Maria counted the dimes they have been saving for 3 years. Chris has 945 and Maria has 754 dimes. About how many dimes do they have together?

a)
$$\begin{array}{r} 900 \\ +\ 700 \\ \hline 1{,}600 \end{array}$$

b)
$$\begin{array}{r} 1{,}000 \\ +\ 800 \\ \hline 1{,}800 \end{array}$$

c)
$$\begin{array}{r} 900 \\ +\ 600 \\ \hline 1{,}500 \end{array}$$

d)
$$\begin{array}{r} 900 \\ +\ 800 \\ \hline 1{,}700 \end{array}$$

7. Alexis says the sum of $15.52, $16.4, and $13.125 is about $50. Is she correct? Why or why not?

Unit 2.6

Math Challenges

Exercise

1. The table shows the areas of four states.

State	Oklahoma	Wyoming	Oregon	Montana
Area (Sq.ml)	68,898	97,814	98,381	147,042

a) What is the total area of Oklahoma and Oregon?

b) Find the difference of area between Montana and Wyoming.

c) Is the difference in the area between Oregon and Wyoming greater than or less than a thousand? Explain.

d) Is the total area of Oklahoma and Wyoming greater than the area of Montana? Explain.

Unit 2.6

Math Challenges

Exercise

2. Which two numbers in the box | 85 62 30 12 | have a difference of 50? Which two have a sum of 115?

3. Fill in the blanks and verify.

_____ + (75 + _____) = (150 + _____) + 25

4. Find the missing digits.

$$\begin{array}{r} 2\ 6\ 3,\ 5\ 5\ 6 \\ 1\square\ 4,\ 5\square\ 7 \\ +\quad 3\ 9\square,\ \square\ 8\ 5 \\ \hline \square\ 6\ 3,\ 2\ 5\ \square \end{array}$$

5. Find the missing number. Explain how you found it.

70,000 - 28,000 = _____ + _____

40,000 30,000

Exercise

6. The table shows the attendance of three zoos.

Zoo attendance	
Nashville zoo:	624,653
Oregon zoo:	1,250,851
Brookfield zoo:	1,763,532

a) Round the attendance to the nearest hundred thousand for each zoo.

b) Estimate the total attendance of Nashville zoo and Oregon zoo.

c) Is the total attendance of Nashville zoo and Oregon zoo is greater than the attendance of Brookfield zoo? Explain.

7. The cost of a calculator is $14.25.What is 14.25 when rounded to the nearest tenth? Nearest whole number? Nearest ten?

Congratulations!

You have finished a lesson. You should be very proud of yourself.
Now it is time to progress to the next lesson.
Your next assignment is notated by a green arrow.

Next

Grade 5 Answer Key of Lesson 2

Unit 2.1

1. a) 44 b) 115 c) 64 d) 36
   e) 84 f) 47 g) 2,077 h) 214
   i) 434 j) 135 k) 28 l) 370
   m) 730 n) 585
2. 55 3. 43 4. a 5. yes
6. 10+(33+12)=(10+33)+12; 55

Unit 2.2

1. a) 99,409 b) 2,944 c) 117,749,980 d) 156,140
   e) 68,445,690 f) 937,280 g) 28,316,916 h) 239,004
   i) 697,742 j) 8,503,372 k) 17,178,730 l) 7,216,230
   m) 383,225 n) 4,153,591 o) 37,482,603 p) 1,368,010,740
2. 218,408 3. 74,083,450 4. b 5. 34,424,385
6. 25

Unit 2.3

1. a) inverse b) commutative c) associative d) identity
   e) inverse 2. a) 59 b) 36 c) 117
   d) 268 3. a) 44; 33; 77 b) 25; 25 c) 7; 24
   d) -28; 0 e) 36; 14; 50 f) 30; 40; 130 4. associative
5. 45+6=51 6. 64-32=32 7. d
8. 19,365+23,879=43,244 9. 22+(33+44)=(22+33)+44

Unit 2.4

1. a) 10 b) 40 c) 600 d) 700
   e) 2,670 f) 6,100 g) 49,000 h) 91,500
   i) 650,000 j) 700,000
2. a) 27 b) 8.20 c) 0.460 d) 0.900
   e) 615 f) 94.010 g) 703 h) 453
   i) 0.62 j) 16
3. a) 57,364,500; 57,365,000; 57,000,000
   b) 141,526,200; 141,526,000; 142,000,000
   c) 825,641,900; 825,642,000; 826,000,000
   d) 362,854,100; 362,854,000; 363,000,000
   e) 6,317,295,600; 6,317,296,000; 6,317,000,000
4. 85^0 F 5. 240,000 L 6. c 7. 38,600,000
8. 3.580 cm

Unit 2.5

1. a) 1,200 b) 2,000 c) 12,000 d) 3,000
   e) 5,000 f) 4,000 2. a) 5 b) 5
   c) 18 d) 28 e) $17 f) 19

Answer Key of Lesson 2

3. a) 79,000 b) 17,000 c) $52 d) 58
   e) $108,000 f) 89,000 4. 30,000 5. 33 inch
6. d 7. no; about $45

Unit 2.6

1. a) 167,279 b) 49,228 c) less than thousand d) yes
2. 62-12=50; 85+30=115 3. 150+(75+25)=(150+75)+25=250
4. 263,556+104,517+395,185=763,258 5. 40,000+2,000
6. a) 600,000; 1,300,000; 1,800,000 b) 1,900,000 c) no
7. $14.30; $14, $10

Unit 2.7

1. a) 4.3×10^{13} b) 1.41×10^{12} c) 10^{14} d) 7.32×10^{8} e) 4.5×10^{10} f) 2.89×10^{11}
2. a) 200,000 b) 1,500,000,000 c) 403,000,000 d) 38,000,000
   e) 700,00,000,000
3. a) 4.27×10^{7} b) 6.66×10^{10} c) 7.78×10^{8} d) 3.8×10^{8}
4. 1.9×10^{7}
5. 1.11×10^{8}
6. d
7. 38,000,000,000,000,000
8. No; 3.45×10

Unit 2.8

1. 9,999,999,999
2. 58,646,800; 28,646,800
3. 9,999,999; 1,000,000
8. b