Important Concepts . . .

Preview Review

Mathematics   Grade 6   TEACHER KEY

W1 - Lesson 1: Basic Facts, Basic Operations, and Integers

Important Concepts of Grade 6 Mathematics

Materials Required: A textbook is not needed. This is a stand-alone course.

Mathematics Grade 6
Version 5
Preview/Review W1 - Lesson 1 TEACHER KEY

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Preview/Review Concepts for
Grade Six Mathematics

TEACHER KEY
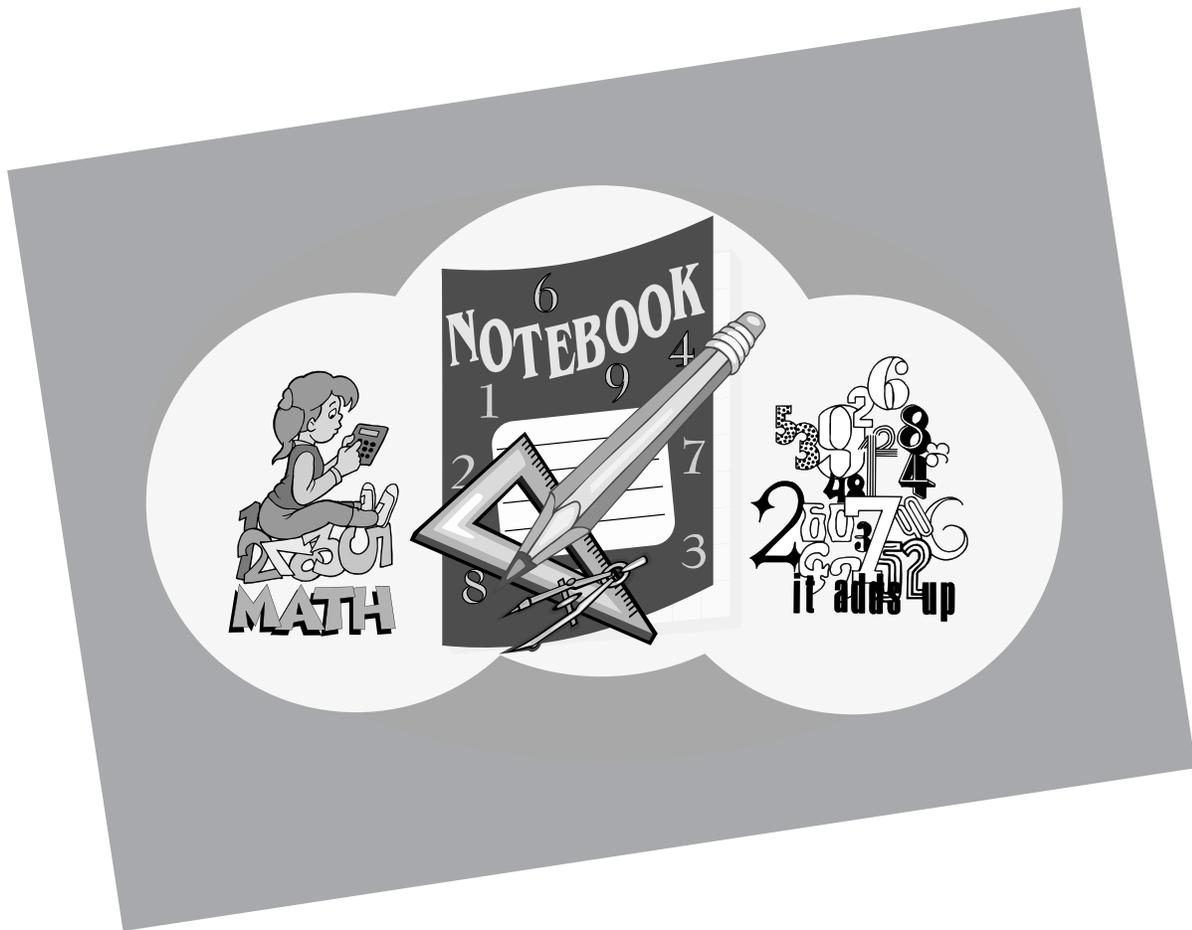
W1 - Lesson 1:
Basic Facts, Basic
Operations, and Integers

OBJECTIVES

By the end of this lesson, you should

- know basic facts of addition, subtraction, multiplication, and division

- perform basic operations of addition, subtraction, multiplication, and division

- understand positive and negative integers

GLOSSARY

addition: the process of combining amounts to have more

integer: a positive or negative number or a zero

multiplication: the process of increasing an amount a number of times

subtraction: the process of removing some amount to have less

W1 - Lesson 1: Basic Facts, Basic Operations, and Integers

Welcome to the Preview/Review of Grade Six Mathematics. This course contains 15 lessons, each 90 minutes in length. No textbook is required because all instructions and worksheets are provided.

Welcome to W1 - Lesson 1! This lesson tests your knowledge of the basic facts and your competency in basic mathematics operations. Four two-minute timed quizzes (addition, subtraction, multiplication, and division) and two short exams are included. The first exam is on addition and subtraction and the second exam is on multiplication and division. Students are **not** allowed to use calculators because the purpose of the tests is to evaluate their present skill levels.

At the end of the lesson, you are asked to evaluate your work on that lesson. Please be specific and honest in your evaluation. You are asked three questions. Notice the sample answers. Your answers at the end of each lesson show you know what you know, and they help your teacher help you!

Self-Evaluation

Ask yourself some important questions. Write your answers in sentences for your teacher.

1. In this lesson, what part of your work was **excellent**?
    Example: *I know my times tables to 6 very well. I understand integers and basic operations.*

2. In this lesson, what part of your work needs improvement?
    Example: *I know my times tables to 6 very well, but I have trouble with 7, 8, and 9 times tables.*

3. If you want help for some of the work in this lesson, ask your teacher in this space.
    Example: *I need help with long division. I get too many wrong.*

Complete as many operations as possible in the time alloted for each operation.

Basic Facts: Addition... Two Minutes

$6 + 3 = \underline{9}$ $4 + 9 = \underline{13}$ $6 + 5 = \underline{11}$ $7 + 2 = \underline{9}$ $4 + 7 = \underline{11}$

$1 + 8 = \underline{9}$ $4 + 5 = \underline{9}$ $9 + 7 = \underline{16}$ $8 + 8 = \underline{16}$ $5 + 7 = \underline{12}$

$9 + 6 = \underline{15}$ $7 + 8 = \underline{15}$ $8 + 2 = \underline{10}$ $5 + 9 = \underline{14}$ $4 + 8 = \underline{12}$

$3 + 9 = \underline{12}$ $6 + 6 = \underline{12}$ $8 + 5 = \underline{13}$ $7 + 6 = \underline{13}$ $8 + 9 = \underline{17}$

$7 + 7 = \underline{14}$ $4 + 6 = \underline{10}$ $9 + 9 = \underline{18}$ $6 + 8 = \underline{14}$ $3 + 7 = \underline{10}$

Number of questions completed: _____   Number of questions correct: _____

Basic Facts: Subtraction... Two Minutes

$10 - 4 = \underline{6}$ $8 - 3 = \underline{5}$ $15 - 6 = \underline{9}$ $9 - 7 = \underline{2}$ $12 - 5 = \underline{7}$

$7 - 3 = \underline{4}$ $11 - 9 = \underline{2}$ $6 - 2 = \underline{4}$ $16 - 7 = \underline{9}$ $13 - 8 = \underline{5}$

$15 - 2 = \underline{13}$ $14 - 6 = \underline{8}$ $12 - 8 = \underline{4}$ $13 - 6 = \underline{7}$ $17 - 9 = \underline{8}$

$8 - 1 = \underline{7}$ $10 - 7 = \underline{3}$ $5 - 0 = \underline{5}$ $12 - 9 = \underline{3}$ $11 - 3 = \underline{8}$

$18 - 9 = \underline{9}$ $9 - 4 = \underline{5}$ $16 - 8 = \underline{8}$ $13 - 4 = \underline{9}$ $14 - 5 = \underline{9}$

Number of questions completed: _____ Number of questions correct: _____

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Basic Facts: Multiplication... Two Minutes

$9 \times 2 = \underline{18}$　$4 \times 4 = \underline{16}$　$2 \times 6 = \underline{12}$　$8 \times 8 = \underline{64}$　$0 \times 4 = \underline{0}$

$6 \times 3 = \underline{18}$　$8 \times 9 = \underline{72}$　$8 \times 7 = \underline{56}$　$6 \times 9 = \underline{54}$　$6 \times 6 = \underline{36}$

$9 \times 0 = \underline{0}$　$9 \times 5 = \underline{45}$　$8 \times 6 = \underline{48}$　$7 \times 7 = \underline{49}$　$8 \times 4 = \underline{32}$

$9 \times 7 = \underline{63}$　$5 \times 5 = \underline{25}$　$7 \times 6 = \underline{42}$　$7 \times 3 = \underline{21}$　$4 \times 9 = \underline{36}$

$4 \times 8 = \underline{32}$　$2 \times 8 = \underline{16}$　$9 \times 3 = \underline{27}$　$9 \times 9 = \underline{81}$　$3 \times 8 = \underline{24}$

Number of questions completed: _____ Number of questions correct: _____

Basic Facts: Division .... Two Minutes

$4 \div 1 = \underline{4}$　$28 \div 4 = \underline{7}$　$36 \div 6 = \underline{6}$　$24 \div 8 = \underline{3}$　$10 \div 2 = \underline{5}$

$14 \div 2 = \underline{7}$　$56 \div 7 = \underline{8}$　$40 \div 8 = \underline{5}$　$72 \div 9 = \underline{8}$　$54 \div 6 = \underline{9}$

$36 \div 9 = \underline{4}$　$35 \div 5 = \underline{7}$　$18 \div 3 = \underline{6}$　$56 \div 8 = \underline{7}$　$40 \div 5 = \underline{8}$

$64 \div 8 = \underline{8}$　$42 \div 7 = \underline{6}$　$27 \div 3 = \underline{9}$　$63 \div 7 = \underline{9}$　$12 \div 2 = \underline{6}$

$16 \div 4 = \underline{4}$　$81 \div 9 = \underline{9}$　$30 \div 5 = \underline{6}$　$48 \div 6 = \underline{8}$　$32 \div 8 = \underline{4}$

Number of questions completed: _____ Number of questions correct: _____

Test 1: Addition and Subtraction Exam................................. Seven Minutes

Students **may not** use calculators. Complete as many as possible in the time allowed. Check your work if you have time.

1. $\begin{array}{r} 26 \\ 35 \\ 48 \\ + 73 \\ \hline \textbf{\textit{182}} \end{array}$
2. $\begin{array}{r} 224 \\ 537 \\ 810 \\ + 645 \\ \hline \textbf{\textit{2 216}} \end{array}$
3. $\begin{array}{r} 7\,869 \\ + 2\,463 \\ \hline \textbf{\textit{10 332}} \end{array}$
4. $\begin{array}{r} 9\,573 \\ - 4\,668 \\ \hline \textbf{\textit{4 905}} \end{array}$
5. $\begin{array}{r} 82\,630 \\ - 53\,574 \\ \hline \textbf{\textit{29 056}} \end{array}$

6. $\begin{array}{r} 760 \\ 939 \\ 425 \\ + 778 \\ \hline \textbf{\textit{2 902}} \end{array}$
7. $\begin{array}{r} 4\,081 \\ 5\,253 \\ 6\,798 \\ + 3\,024 \\ \hline \textbf{\textit{19 156}} \end{array}$
8. $\begin{array}{r} 25\,895 \\ 94\,325 \\ 65\,466 \\ + 45\,321 \\ \hline \textbf{\textit{231 007}} \end{array}$
9. $\begin{array}{r} 8\,003 \\ - 2\,195 \\ \hline \textbf{\textit{5 808}} \end{array}$
10. $\begin{array}{r} 70\,802 \\ - 39\,814 \\ \hline \textbf{\textit{30 988}} \end{array}$

Number of questions completed: _____ Number of questions correct: _____

Test 2: Multiplication and Division Exam .... Ten Minutes

Students **may not** use calculators. Complete as many as possible in the time allowed. Check your work if you have time.

1.
$$\begin{array}{r} 54 \\ \times\ 3 \\ \hline 162 \end{array}$$

2.
$$\begin{array}{r} 807 \\ \times\ \ 4 \\ \hline 3\ 228 \end{array}$$

3.
$$\begin{array}{r} 156 \\ 3\overline{)468} \\ -\ 3\downarrow \\ \hline 16 \\ -\ 15\downarrow \\ \hline 18 \\ -\ 18 \\ \hline 0 \end{array}$$

4.
$$\begin{array}{r} 858 \\ 11\overline{)9438} \\ -\ 88 \\ \hline 63 \\ -\ 55 \\ \hline 88 \\ -\ 88 \\ \hline 0 \end{array}$$

5.
$$\begin{array}{r} 864 \\ 7\overline{)6048} \\ -\ 56 \\ \hline 44 \\ -\ 42 \\ \hline 28 \\ -\ 28 \\ \hline 0 \end{array}$$

6.
$$\begin{array}{r} 875 \\ \times\ 64 \\ \hline 3\ 500 \\ 52\ 500 \\ \hline 56\ 000 \end{array}$$

7.
$$\begin{array}{r} 369 \\ \times\ 254 \\ \hline 1\ 476 \\ 18\ 450 \\ 73\ 800 \\ \hline 93\ 726 \end{array}$$

8.
$$\begin{array}{r} 96 \\ \times\ 25 \\ \hline 480 \\ 1\ 920 \\ \hline 2\ 400 \end{array}$$

9.
$$\begin{array}{r} 2\ 351 \\ 41\overline{)96\ 391} \\ -\ 82 \\ \hline 143 \\ -\ 123 \\ \hline 209 \\ -\ 205 \\ \hline 41 \\ -\ 41 \\ \hline 0 \end{array}$$

10.
$$\begin{array}{r} 379 \\ 25\overline{)9475} \\ -\ 75 \\ \hline 197 \\ -175 \\ \hline 225 \\ -225 \\ \hline 0 \end{array}$$

Number of questions completed: _____ Number of questions correct: _____

Integers

An **integer** is a positive or negative whole number or a zero.

> A positive integer is written with the symbol +.
> +7 is read as "positive seven".
>
> A negative integer is written with the symbol −.
> −4 is read as "negative four".

We use integers everyday. Notice that the bolded key words determine if the numbers are positive or negative.

Some examples: (answer in brackets)

   a. The army tank **advanced** 25 metres. (+25)

   b. The stairway went **up** 11 floors. (+11)

   c. The temperature **fell** 8 degrees. (–8)

   d. The Oilers are **leading** the Flames by 2 goals. (+2)

   e. The Canadian skier was 35 metres **behind** the leader. (–35)

Questions

1. Write the following integers in words:

    Example: + 49:   positive forty-nine

    a.   –34:   *negative thirty-four*

    b.   +18:   *positive eighteen*

    c.   +205:   *positive two hundred five*

    d.   –799:   *negative seven hundred ninety-nine*
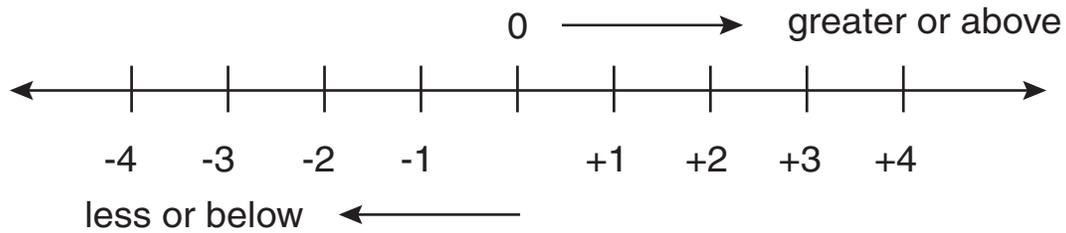
    e.   +802:   *positive eight hundred two*

2. Write these integers in numerals and symbols.

   Example: Negative three hundred twenty: −320

   a. positive six: _____ **+6** _____

   b. negative fifty-four: _____ **-54** _____

   c. negative two hundred eighteen: **-218** _____

   d. positive four thousand three hundred twenty-seven: _____ **+4327** _____

   e. negative six thousand and two: _____ **-6002** _____

3. Name the next three integers.

   Example: below +56:   +55, +54, +53 (Think: Finding the numbers below is like counting backwards.)

   a. above +4:   **+5, +6, +7**

   b. above −8:   **-7, -6, -5**

   c. below +96:   **+95, +94, +93**

   d. above −123:   **-122, -121, -120**

   e. greater than +62:   **+63, +64, +65**

   h. greater than −209:   **-208, -207, -206**

4. Write the next 3 integers in each series:

Example: +2, +4, +6:   +8, +10, +12 (Think: Plus two, four, and six are followed by plus eight, ten, and twelve.)

a. 0, +3, +6,   **+9, +12, +15**

b. −7, −11, −15,   **-19, -23, -27**

c. −20, −15, −10,   **-5, 0, +5**

d. +100, +125, +150,   **+175, +200, +225**

e. +512, +256, +128,   **+64, +32, +16**

f. −888, −789, −690,   **-591, -492, -393**

5. Arrange the integers in order from least to greatest:

Example: +56, −23, +129, −444, 0:   −444, −23, 0, +56, +129

a. −231, −456, −1 006, −95, −198   **-1 006, -456, -231, -198, -95**

b. +8, +6, 0, −11, +26   **-11, 0, +6, +8, +26**

c. +98, +765, −56, −876, +22   **-876, -56, +22, +98, +765**

d. −77, −88, −34, 0, +51   **-88, -77, -34, 0, +51**

e. +987, +5, −456, −87, −1 224   **-1 224, -456, -87, +5, +987**
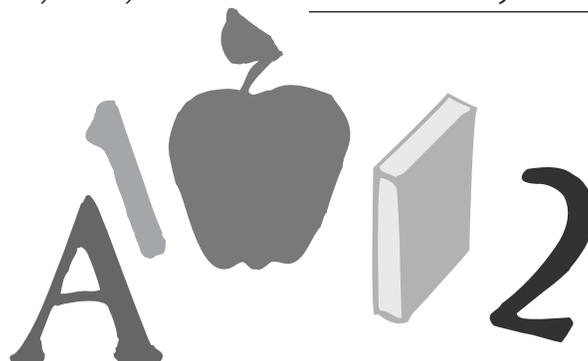
6. Complete the following integer sentences:

   Example: $(-8) + (+12) = +4$

   a. $(-4) + (-9) =$ ___*-13*___

   b. $(+7) + (+18) =$ ___*+25*___

   c. $(-13) + (+11) =$ ___*-2*___

   d. $(+34) + (-15) =$ ___*+19*___

   e. $(-49) + (+27) + (+24) =$ ___*+2*___

   f. $(+87) + (-41) + (-35) =$ ___*+11*___

7. Arrange in order from largest to smallest:

   Example: +444, +555, −23, −345, +200: +555, +444, +200, −23, −345

   a. +700, + 860, +1 335, +24, +444

      +1 335, +860, +700, +444, +24

   b. −2, −5, 0, −20, +5

      +5, 0, -2, -5, -20

   c. −17, +22, −19, +20, +9

      +22, +20, +9, -17, -19

   d. +123, +213, +312, +137, +270

      +312, +270, +213, +137, +123

   e. −1 007, −1 024, −1 042, −1 070, 0

      0, -1 007, -1 024, -1 042, -1 070

8. Find the integers on a number line.

    Following is an example of a number line:
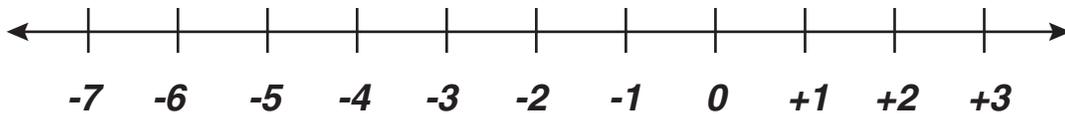
    ```
    ◄──┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───►
      -32  -28   D  -20 -16 -12   E   -4   0    F   8   12   G   20
    ```
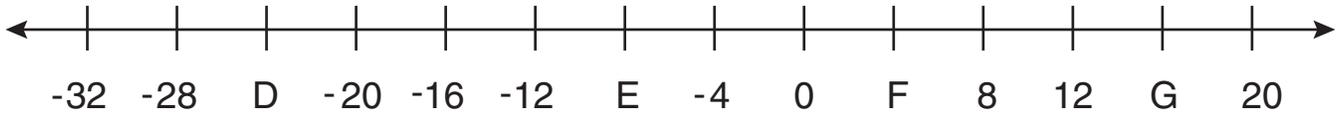
    a. What is the value of D? __*-24*__

    b. What is the value of E? __*-8*__

    c. What is the value of F? __*+4*__

    d. What is the value of G? __*+16*__

9. Draw a number line for each set of integers.

    a. −7 to + 3 (count by 1s)

    ```
    ◄──┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───►
      -7   -6   -5   -4   -3   -2   -1    0   +1   +2   +3
    ```

    b. −25 to + 10 (count by 5s)

    ```
    ◄──┼───────┼───────┼───────┼───────┼───────┼───────┼───────►
      -25     -20     -15     -10      -5       0      +5      +10
    ```

    c. +120 to +260 (count by 20s)

    ```
    ◄──┼───────┼───────┼───────┼───────┼───────┼───────┼───────►
     +120    +140    +160    +180    +200    +220    +240    +260
    ```
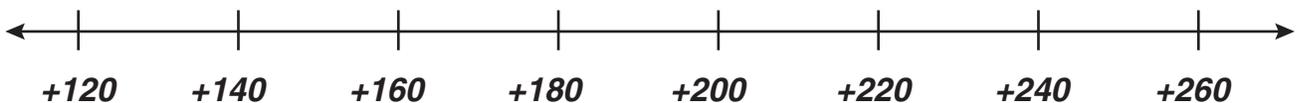
Homework Assignment

Following are the scores of a charity golf match played by Tiger Woods, Mike Weir, Wayne Gretzky, and Premier Ralph Klein.

Hole Number	1	2	3	4	5	6	7	8	9	Total
Par	5	5	4	5	5	3	4	4	5	40
Tiger Woods	4	4	4	3	4	3	3	3	4	
Mike Weir	4	5	3	4	4	3	4	3	3	
Ralph Klein	8	7	5	5	7	4	6	5	8	
Wayne Gretzky	4	5	3	7	4	3	4	4	6	

1. Calculate each player's final score.

    a. Tiger ___*= 32*___

    b. Mike ___*= 33*___

    c. Ralph ___*= 55*___

    d. Wayne ___*= 40*___

2. Write each player's total score as an integer showing whether he is above or below par.

    a. Tiger ___*- 8*___

    b. Mike ___*- 7*___

    c. Ralph ___*+ 15*___

    d. Wayne ___*0*___

Self-Evaluation

Ask yourself some important questions. Write your answers in sentences for your teacher.

1. In this lesson, what part of your work was **excellent**?

   _____

   _____

   _____

2. In this lesson, what part of your work **needs improvement**?

   _____

   _____

   _____

3. If you want help for some of the work in this lesson, ask your teacher in this space.

   _____

   _____

   _____