APPENDIX A — READING PRACTICE

Proofreading your work will improve as you become more proficient at recognizing the braille symbols. The exercises in this appendix will develop your braille reading skills.

Instructions: After studying each lesson, practice writing out a translation of the simulated braille. Check your interpretation by comparing to the printed version found in the second half of this appendix.

These readings contain only a few of the topics covered in the course. You can gain more reading practice by back-translating the ANSWERS TO PRACTICE MATERIAL at the end of each lesson.

Lesson 1 Reading Practice

Lesson 2 Reading Practice
Lesson 3 Reading Practice

On a number line, 5 lies to the left of 3. The absolute value of 5 is 5. The absolute value of 3 is 3. Is the number 5 greater than or less than 3?

Lesson 4 Reading Practice

Since 12 is 3 years less than 18, how many weeks is 6 months 3 years less than 12 years?

Each student in a classroom is tall for their socks. Each student is taller than the other students. Each student drops a 1.5 second drop. How many drops fall in 1 minute?

The commutative properties of addition & multiplication express us as a way to rearrange parentheses: $(a + b) + c = a + (b + c)$ or $(ab)c = a(bc)$.

In a rectangle, the length is the longer side. If the side length is 4 cm, how long is the side that is 6 cm long?
Lesson 5 Reading Practice

Can expressions using an ellipse express $x^2 + 2x + 1 = 0$?

Yes, $x = -1$ or $x = -2$.

Since HOG set notation may use $\leq$, the set of $x$ is on the

The ellipse is not.

Given $k$ in HOG notation may use $\leq$, the set of $x$ is return.

Given the hexadecimal system uses symbols $16_{16}$ for base 16. For example, $12_{16}$ in base 10 is $1 \times 16 + 2 \times 10$.

In base 16, $Z$ represents $15_{16}$.

In base 16, $12_{16}$ represents a hexadecimal digit, or capitalizing a prefix.

Lesson 6 Reading Practice

In Spanish, we spoke in IP or IQ error.

Integer division is its digits in the base $x$ to illustrate $x$. $x$ is $x$.

In base $x$, $x$ is the remainder in the square.

Graph the inequality $x^2 + y + 1 = 0$.

Use a number line to express by $x$.

In base $x$, $x$ is the same as $x$.

In English, $x$ is capital.
Lesson 7 Reading Practice

1. Use all parallel LMs on sheets 1 and 2. Left-handed LMs on helix L2.
2. Use Judy & Logic: Use R & Boldface equals sign in L2. Use avoids unneeded mix-ups & is standard equals sign. Use 8 next to double-bracks LRs to indicate LBM & is script typeface indicator. Lt.
3. Use symbol denotes set & natural numbers. Lm
   \[ \{ 1, 2, 3 \} \]
   \[ \{ 4, 5, 6 \} \]
   \[ \{ 7, 8, 9 \} \]
4. Use as a vector Lm L1, L2, L3 & Lm L1, L2, L3, L4

Lesson 8 Reading Practice

Lm

Isotopes

| Hydrogen   | H | 1H | \( ^1 \mathrm{H} \) |
| Uranium    | U | 238U | \( ^{238} \mathrm{U} \) |

Cations

| Sodium     | Na | +1 | \( ^{+1} \mathrm{Na}^{+} \) |
| Aluminum   | Al | +3 | \( ^{+3} \mathrm{Al}^{3+} \) |

Anions

| Iodine     | I | -1 | \( ^{-1} \mathrm{I}^{-} \) |
| Oxygen     | O | -2 | \( ^{-2} \mathrm{O}^{2-} \) |

Le
Lesson 9 Reading Practice

To simplify a radical expression, use product and quotient properties of radicals:

\[ \sqrt{XY} = \sqrt{X} \cdot \sqrt{Y} \]
\[ \frac{\sqrt{X}}{\sqrt{Y}} = \sqrt{\frac{X}{Y}} \]

**Demonstrations:**

\[ \sqrt{16} = 4 \]
\[ \frac{\sqrt{25}}{\sqrt{16}} = \frac{5}{4} \]

\[ \sqrt{\frac{15}{16}} = \frac{\sqrt{15}}{4} \]

Lesson 10 Reading Practice

Prove that \( S \) is a subspace if and only if:

(1) \( S \subseteq V + W \) and \( S \cap W \neq \emptyset \)

(2) \( S \subseteq \text{span}(S) \)
Lesson 11 Reading Practice

1. Calculate a total cost of an item sold.

\[ \text{Price} \times \text{Quantity} = \text{Total Cost} \]

2. Add the tax.

\[ \text{Total Cost} + \text{TAX} = \text{Total Amount} \]

Lesson 12 Reading Practice

1. Rewrite a simplified fraction.

\[ \frac{3}{4} \]

2. Write a non-zero vector.

\[ \text{Vector} = \text{LUU} \]

\[ \text{LUU} = 1 \]

\[ \text{LUU} = 2 \]

\[ \text{LUU} = 3 \]

\[ \text{LUU} = 4 \]

\[ \text{LUU} = 5 \]

\[ \text{LUU} = 6 \]

\[ \text{LUU} = 7 \]

\[ \text{LUU} = 8 \]

\[ \text{LUU} = 9 \]

\[ \text{LUU} = 10 \]
Lesson 13 Reading Practice

**DIVISION PROBLEM**

A number is divided by a two-digit number.

**COMPUTE & NUMBERS INDICATE BY FACTORIAL NOTATION.**

A number.
Lesson 14 Reading Practice

\[ \sqrt{\text{Root}} \quad \text{Value} \]

**Provide your answers to the following problems on a separate sheet of paper:**

1. Find the value of \( \sin \theta \) if \( \theta = 30^\circ \).
2. Evaluate \( \tan \theta \) when \( \theta = 45^\circ \).
3. Simplify: \( \log_2 8 \).
4. Prove the identity: \( \cot^2 \theta - 1 = \csc^2 \theta \).

In this section, stating \( \cot \theta \) is \( \text{not} \) true.

In cot \( \theta \) is \( \text{not} \) equal to \( \csc \theta \) but \( \text{is} \) equal to \( \sec \theta \).
Lesson 15 Reading Practice

\[
\text{Lux}
\]

\[
\text{Exp}
\]

\[
\text{Us}
\]

\[
\text{Symbols}
\]
Lesson 16 Reading Practice

Multiply a matrix by a scalar. $A = LM$

$A_{[1,2]} = 2 \cdot 1 + 3 \cdot 1 = 5$

The second matrix is the result. For calculations, $LM = A_{[1,2]}$

$1 \cdot 2 + 1 \cdot 1 = 3$

$2 \cdot 2 + 1 \cdot 1 = 5$

$3 \cdot 2 + 1 \cdot 1 = 7$

System $LM$ has a solution. A system $LM$ has $x = 1$ and $y = 2$.

Solution set $LM$ is $(1, 2)$.

There are no reading practices for lessons 17 and 18.
ANSWERS

Lesson 1

$4.98, 27¢, $0.11
6'8" = 80"
27 – 31 < 31 – 27
6 : 2 :: 12 : 4
49 ÷ 7 > 1 × 5
−.5 < .5
10 · 10 · 10 = 1,000

Lesson 2

1. Show with cubes that 8 + 3 = 3 + 8.
2. Fill in the missing numbers: −7 − 5 ? −1 1 ? 5 ?
3. I scored 100% on the "Counting By 8s" quiz!
4. Craig bought a bunch of bananas at $.48 per pound. He spent $1.68. How many pounds of bananas did he buy? Answer: 3.5 pounds
5. The test scores ranged from 26.5-98.9.

Lesson 3

1) On a number line, the distance from 0 to −3 is its absolute value—that is, |−3| = 3.
2) What is |−13|? −(−13) = +13 because two −’s make a +.
3) [(3 + 2) × (6 − 4) + 2] × 4 = [(5 × 2) + 2] × 4 = 48
4) Complete the number series: .25, .5, .75, __, __.
Lesson 4

Since 1 yr = 52 weeks, how many weeks are there in 2 yrs?

The set of children wearing red socks today: \{Chloe, Oliver, Charlie\}.

Ava counted 7 drops in 1.5 sec. How many drops will fall in 1.5 min?

Here are the commutative properties of addition and multiplication expressed using a and b: \(a + b = b + a\) and \(a \cdot b = b \cdot a\) or \(ab = ba\).

The area of rectangle PQRS is 4.5 sq m. If side PQ is 3 cm, how long is side QR?

Lesson 5

i) The area of an ellipse, expressed as "A": \(A = \pi ab\).

ii) Point (5, 7) is on ray ST.

iii) Power set notation may use the "Weierstrass P" as in P(S). If \(S = \{\}\) then P(S)= \(\{\{\}\}\) is returned.

iv) The hexadecimal system uses symbols 0-9 and A-F. For example, 45,997 in base 10 is B3AD in base 16.

TN Letters representing hexadecimal digits are capitalized in print. TN

Lesson 6

\(\sim p \lor q\) spoken: "not p or q (or both)".

Integer division is sometimes denoted \(\div\), as illustrated here: \(10/3 = 3 + 1/3\), so \(10\div3 = 3\). The remainder is not noted.

Graph this inequality: \(y \leq x + 2\)

Use a number line to explain why \(-6 - (-6) = 0\). Is this the same as \(-6 + +6\)?

1 \# (2 & 3) = (1 \# 2) \& (1 \# 3)
Lesson 7

1. Several parallel β-sheets form a left-handed β-helix.

2. In the study of logic, use of the boldface equality sign $\equiv$ avoids unintended mix-ups with the standard equals sign.

   **TN** In the next question, double-struck letters are indicated in braille with the script typeform indicator. **TN**

3. Which symbol denotes the set of natural numbers?
   a. $\mathbb{Z}$
   b. $\mathbb{N}$
   c. $\mathbb{R}$

4. Is there a vector $s$ such that $r + s = t$?

Lesson 8

**Isotopes**

- **Hydrogen** $^1H$
- **Uranium** $^{238}U$

**Cations**

- **Sodium** $^{23}_{11}\text{Na}^+$
- **Aluminum** $^{27}_{13}\text{Al}^{3+}$

**Anions**

- **Iodine** $^{127}_{53}\text{I}^-$
- **Oxygen** $^{16}_{8}\text{O}^{2-}$
Lesson 9

To simplify a radical expression, use the product and quotient properties of radicals,

\[ \sqrt{xy} = \sqrt{x} \cdot \sqrt{y} \quad \text{and} \quad \sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}} \]

as demonstrated below.

\[ \sqrt{16x} = \sqrt{16} \cdot \sqrt{x} = \sqrt{4^2} \cdot \sqrt{x} = 4\sqrt{x} \]

\[ \sqrt{\frac{25}{16}} x^2 = \frac{\sqrt{25}}{\sqrt{16}} \cdot \sqrt{x^2} = \frac{5}{4} x \]

\[ \sqrt{\frac{15}{16}} = \frac{\sqrt{15}}{\sqrt{16}} = \frac{\sqrt{15}}{4} \]

Lesson 10

Prove that S is a subspace of V if and only if:

1. \( v, w \in S \Rightarrow v + w \in S \)
2. \( \lambda \in K, V \in S \rightarrow \lambda \cdot v \in S \)

Find the mistake:

\[
\begin{array}{cccc}
4 & 13 \\
3 & 3 & 3 & 5 \\
- & 4 & 9 & 2 & 5 \\
1 & 4 & 1 & 0
\end{array}
\]

Lesson 11

1. Calculate the total cost of an item selling for $8.79 with 5.5% tax added.
   \[ 8 \ . \ 7 \ 9 \ + \ 5 \ . \ 5 \ % \ = \]

2. \( \angle ABD + \angle DBE = ? \)

3. \([a, b] \oplus [c, d]\)

4. \(\{\triangle, \diamond, \bigcirc\} \cup \{\square\}\)

5. Add \(30^\circ\) and \(20^\circ\).
Lesson 12

Note: Your translation may show a different omission symbol in item (ii).

(i) Rewrite as a simplified fraction.

0.3
3.16
2.18

(ii) 197
\[
\begin{array}{c}
76 \\
112 \\
1079 \\
1092 \\
\end{array}
\]

(iii) Versor \( \hat{u} \) of a non-zero vector \( u \) is \( \hat{u} = \frac{u}{|u|} \) where \( |u| \) is the length of \( u \).

Lesson 13

The division problem 4.2)3313.8 is demonstrated below.

\[
\begin{array}{c}
789.0 \\
3313.8,0 \\
294 \\
373 \\
336 \\
378 \\
378 \\
0 \\
\end{array}
\]

Compute the numbers indicated by the factorial notation.

1. \( \frac{6!}{3!2!} \)
2. \( 7! \)
3. \( \frac{10!}{5!5!} \)
Lesson 14

Find the square root of 484.

\[
\begin{array}{c|c}
2 & 2 \\
\hline
\sqrt{484} & 4 \\
\hline & 42 \sqrt{084} \\
\times 2 & \underline{084} \\
& 0 \\
\end{array}
\]

Since the remainder is 0, \(\sqrt{484} = 22\).

Provide your answers to the following problems on a separate sheet of paper.

1. Find the value of \(\sin \frac{5\pi}{12}\).
2. What is \(\text{Arc csc} \left(-\sqrt{2}\right)\)?
3. Simplify: \(e^{\log_e e}\)
4. Prove this reduction formula: \(\tan(90^\circ + \theta) = -\cot \theta\).
5. Is the following identity true? \(\cot 2\theta = \frac{\cot^2 \theta - 1}{2 \cot \theta}\)

Lesson 15

8) \(9 \frac{1}{2} = 9 \frac{12}{8} = 9 \frac{4}{8}\)

\(-4 \frac{7}{8} = 4 \frac{7}{8}\)

\(4 \frac{5}{8}\)

9) If \(\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \frac{1}{3}\), express \(\frac{1}{2} \frac{1}{3}\) using \(\div\) symbols.
Lesson 16

**Scalar Multiplication**  Multiply the matrix by the scalar "2", like this:

\[
2 \times \begin{bmatrix} 4 & 0 \\ 1 & -9 \end{bmatrix} = \begin{bmatrix} 8 & 0 \\ 2 & -18 \end{bmatrix}.
\]

The second matrix is the result of four calculations: \(2 \times 4 = 8\), \(2 \times 0 = 0\), \(2 \times 1 = 2\), and \(2 \times -9 = -18\).

The system \(\begin{cases} x + 2y = 8 \\ 2x - 3y = 2 \end{cases}\) has the solution set \{\((4, 2)\)\}. 