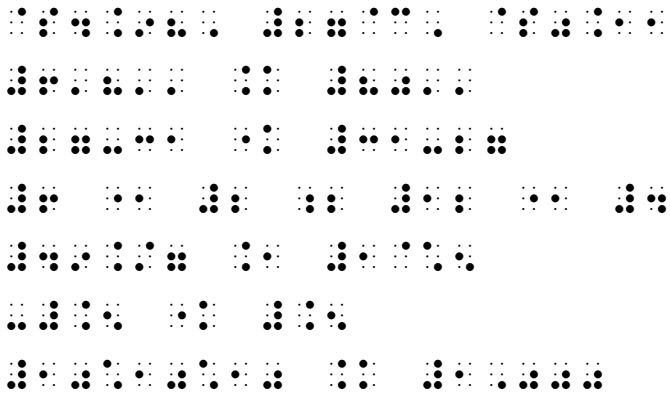
APPENDIX A — READING PRACTICE

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.

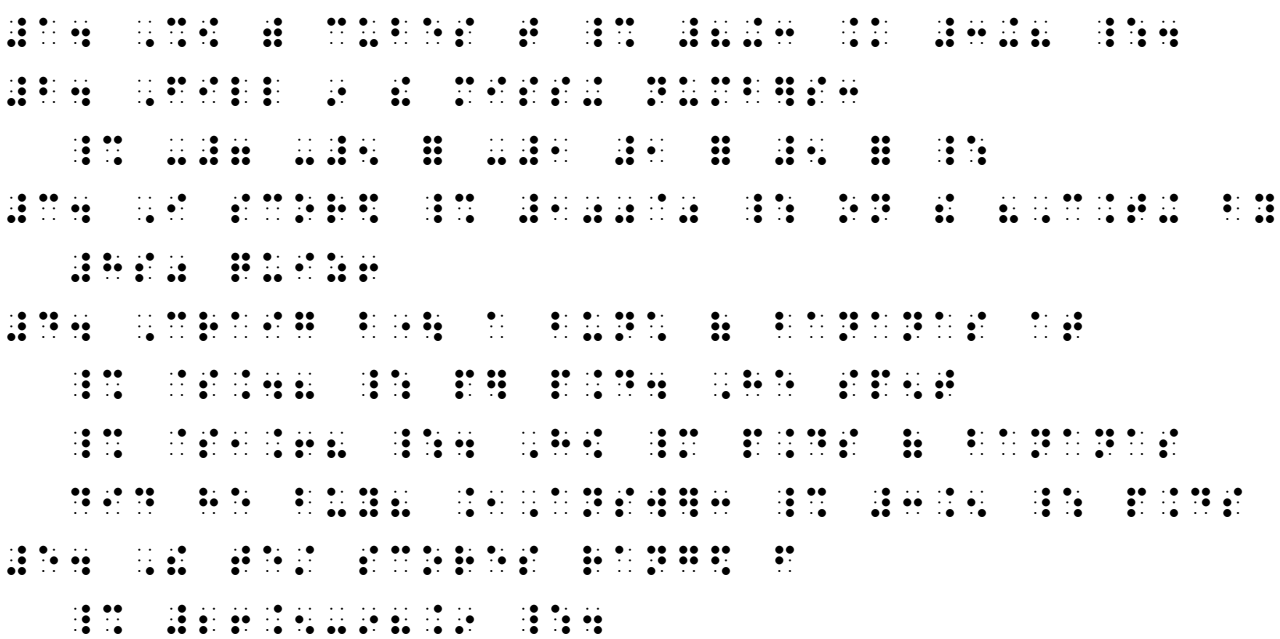
Instructions: After studying each lesson, practice writing out a translation of the simulated braille. Check your interpretation by comparing to the printed version found in the second half of this appendix.

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

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Lesson 4 Reading Practice

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Lesson 5 Reading Practice

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Lesson 6 Reading Practice

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Lesson 7 Reading Practice

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Lesson 8 Reading Practice

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Lesson 9 Reading Practice

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Lesson 10 Reading Practice

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Lesson 11 Reading Practice

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Lesson 12 Reading Practice

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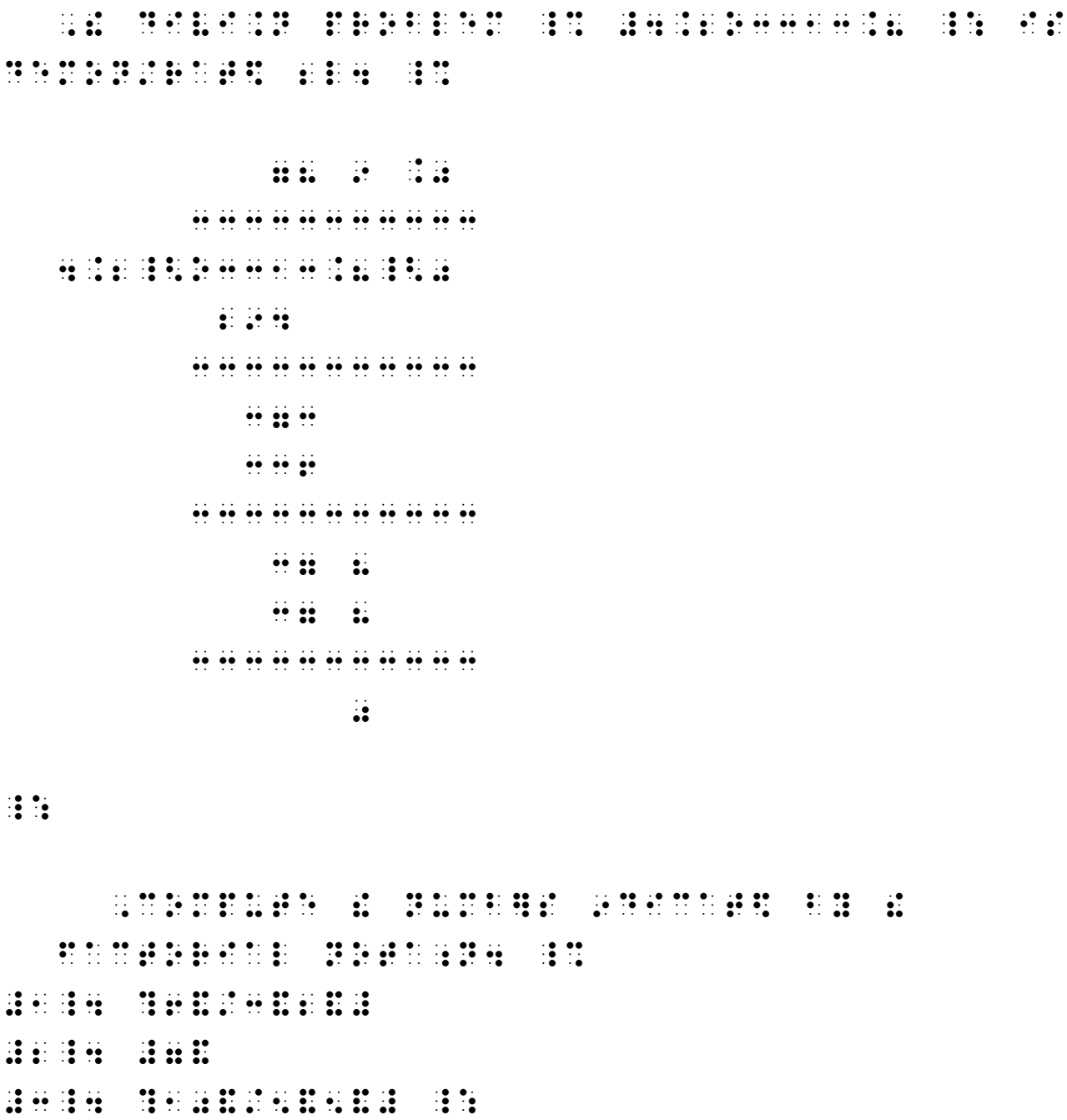
Lesson 13 Reading Practice



Lesson 14 Reading Practice

Lesson 15 Reading Practice

Lesson 16 Reading Practice

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There are no reading practices for lessons 17 and 18.

ANSWERS

Lesson 1

$\$4.98,\ 27¢,\ \$0.11$

$6'8'' = 80''$

$27 - 31 < 31 - 27$

$6 : 2 :: 12 : 4$

$49 \div 7 > 1 \times 5$

$-.5 < .5$

$10 \cdot 10 \cdot 10 = 1{,}000$

Lesson 2

1. Show with cubes that $8 + 3 = 3 + 8$.
2. Fill in the missing numbers: $-7 \quad -5 \quad \underline{\ ?\ } \quad -1 \quad 1 \quad \underline{\ ?\ } \quad 5 \quad \underline{\ ?\ }$
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 <u>distance</u> from 0 to –3 is its <u>absolute</u> <u>value</u>—that is, $|-3| = 3$.
2) What is $|-13|$? $-(-13) = +13$ because two $-$'s make a $+$.
3) $[(3 + 2) \times (6 - 4) + 2] \times 4 = [(5 \times 2) + 2] \times 4 = 48$
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

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

Integer division is sometimes denoted \, as illustrated here: $10/3 = 3 + 1/3$, so $10\backslash 3 = 3$. 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 $\boldsymbol{=}$ 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 $\mathbf{s}$ such that $\mathbf{r} + \mathbf{s} = \mathbf{t}$?

Lesson 8

Isotopes		
Hydrogen		${}^{1}_{1}\mathrm{H}$
Uranium		${}^{238}_{92}\mathrm{U}$
Cations		
Sodium	Na^{+}	${}^{23}_{11}\mathrm{Na}^{+}$
Aluminum	Al^{3+}	${}^{27}_{13}\mathrm{Al}^{3+}$
Anions		
Iodine	I^{-}	${}^{127}_{53}\mathrm{I}^{-}$
Oxygen	O^{2-}	${}^{16}_{8}\mathrm{O}^{2-}$

Lesson 9

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

$$\sqrt{xy} = \sqrt{x} \cdot \sqrt{y} \text{ and } \sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}}$$

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:

$$\begin{array}{r} {\scriptstyle 4\ 13} \\ \cancel{5}\ \cancel{3}\ 3\ 5 \\ -\ \underline{4\ 9\ 2\ 5} \\ 1\ 4\ 1\ 0 \end{array}$$

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] ⊜ [c, d]

4. {△, ◊, ○} ∪ {□}

5. Add ∠30° and ∠20° .

Lesson 12

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

(i) Rewrite as a simplified fraction.

$0.\overline{3}$

$3.1\overline{6}$

$2.\overline{18}$

(ii)

```
   197
 × 76
 11□2
1□79
1□9□2
```

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

Lesson 13

The division problem 4.2)3313.8 is demonstrated below.

```
        789.0
4.2^)3313.8^0
     294
      373
      336
       37 8
       37 8
          0
```

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.

$$\begin{array}{r|l} & 2\ 2 \\ \hline & \sqrt{484} \\ & 4 \\ \hline 42 & 084 \\ \times 2 & 84 \\ \hline & 0 \end{array}$$

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 Arc csc $\left(-\sqrt{2}\right)$?
3. Simplify: $e^{\log_e e}$
4. Prove this reduction formula : $\tan(90° + \theta) = -\cot\theta$.
5. Is the following identity true? $\cot 2\theta = \frac{\cot^2\theta - 1}{2\cot\theta}$

Lesson 15

8)
$$\begin{array}{rcl} & & 8\frac{12}{8} \\ 9\frac{1}{2} & = & \cancel{9}\frac{4}{8} \\ -\,4\frac{7}{8} & = & 4\frac{7}{8} \\ \hline & & 4\frac{5}{8} \end{array}$$

9) If $\frac{1}{2} \div \frac{1}{3} = \frac{\frac{1}{2}}{\frac{1}{3}}$, express $\frac{\frac{\frac{1}{2}}{\frac{1}{3}}}{11}$ using ÷ 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: $2 \times 4 = \mathbf{8}$, $2 \times 0 = \mathbf{0}$, $2 \times 1 = \mathbf{2}$, and $2 \times -9 = -\mathbf{18}$.

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