2 Chapter Review

Chapter 2 Review

For #1 to #4, use the clues to unscramble the letters.

1. S T I S P O P O E

two numbers represented by points that are the same distance in opposite directions from zero on a number line

2. T A L I N A R O B R U N M E

the quotient of two integers, where the divisor is not zero (2 words)

3. C R E F P E T Q U E S A R

the product of two equal rational factors (2 words)

4. F R E N C E N T O P A Q U E R S

a rational number that cannot be expressed as the product of two equal rational factors (2 words, 1 hyphenated)

2.1 Comparing and Ordering Rational Numbers, pages 46–54

5. Which of the following rational numbers cannot be expressed as an integer?

$\frac{24}{3}$ $\frac{3}{24}$ $\frac{-8}{2}$ $\frac{-10}{-6}$ $\frac{-6}{4}$

$-\left(\frac{-21}{-7}\right)$ $\frac{82}{-12}$ $-\left(\frac{-225}{15}\right)$

6. Replace each ■ with >, <, or = to make each statement true.

a) $\frac{-9}{6}$ ■ $\frac{3}{-2}$

b) -0.86 ■ -0.84

c) $-\frac{3}{5}$ ■ $-0.\overline{6}$

d) $-1\frac{3}{10}$ ■ $-\left(\frac{-13}{-10}\right)$

e) $-\frac{8}{12}$ ■ $-\frac{11}{15}$

f) $-2\frac{5}{6}$ ■ $-2\frac{7}{8}$

7. Axel, Bree, and Caitlin were comparing $-1\frac{1}{2}$ and $-1\frac{1}{4}$.

a) Axel first wrote the two mixed numbers as improper fractions. Describe the rest of his method.

b) Bree first wrote each mixed number as a decimal. Describe the rest of her method.

c) Caitlin first ignored the integers and wrote $\frac{1}{2}$ and $\frac{1}{4}$ with a common denominator. Describe the rest of her method.

d) Which method do you prefer? Explain.

8. Write two fractions in lowest terms between 0 and -1 with 5 as the numerator.

2.2 Problem Solving With Rational Numbers in Decimal Form, pages 55–62

9. Calculate.

a) $-5.68 + 4.73$ **b)** $-0.85 - (-2.34)$

c) $1.8(-4.5)$ **d)** $-3.77 \div (-2.9)$

10. Evaluate. Express your answer to the nearest tenth, if necessary.

a) $5.3 \div (-8.4)$

b) $-0.25 \div (-0.031)$

c) $-5.3 + 2.4[7.8 + (-8.3)]$

d) $4.2 - 5.6 \div (-2.8) - 0.9$

11. One evening in Dauphin, Manitoba, the temperature decreased from 2.4 °C to −3.2 °C in 3.5 h. What was the average rate of change in the temperature?

12. Over a four-year period, a company lost an average of $1.2 million per year. The company's total losses by the end of five years were $3.5 million. What was the company's profit or loss in the fifth year?

2.3 Problem Solving With Rational Numbers in Fraction Form, pages 63–71

13. Add or subtract.

a) $\frac{2}{3} - \frac{4}{5}$ **b)** $-\frac{3}{8} + \left(-\frac{3}{4}\right)$

c) $-3\frac{3}{5} + 1\frac{7}{10}$ **d)** $2\frac{1}{3} - \left(-2\frac{1}{4}\right)$

14. Multiply or divide.

a) $-\frac{1}{2}\left(-\frac{8}{9}\right)$ **b)** $-\frac{5}{6} \div \frac{7}{8}$

c) $2\frac{3}{4} \times \left(-4\frac{2}{3}\right)$ **d)** $-4\frac{7}{8} \div \left(-2\frac{3}{4}\right)$

15. Without doing any calculations, state how the values of the following two quotients compare. Explain your reasoning.

$96\frac{7}{8} \div 7\frac{3}{4}$ $-96\frac{7}{8} \div \left(-7\frac{3}{4}\right)$

16. How many hours are there in $2\frac{1}{2}$ weeks?

17. The area of Manitoba is about $1\frac{1}{5}$ times the total area of the four Atlantic provinces. The area of Yukon Territory is about $\frac{3}{4}$ the area of Manitoba. Express the area of Yukon Territory as a fraction of the total area of the Atlantic provinces.

2.4 Determining Square Roots of Rational Numbers, pages 72–81

18. Determine whether each rational number is a perfect square. Explain your reasoning.

a) $\frac{64}{121}$ **b)** $\frac{7}{4}$ **c)** 0.49 **d)** 1.6

19. Estimate $\sqrt{220}$ to one decimal place. Describe your method.

20. Determine the number with a square root of 0.15.

21. Determine.

a) $\sqrt{12.96}$

b) $\sqrt{0.05}$, to the nearest thousandth

22. In what situation is each of the following statements true? Provide an example to support each answer.

a) The square root of a number is less than the number.

b) The square root of a number is greater than the number.

23. A hundred grid has an area of 225 cm².

a) What is the side length of each small square on the grid? Solve this problem in two ways.

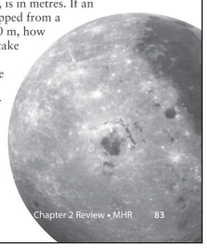
b) What is the length of the diagonal of the whole grid? Express your answer to the nearest tenth of a centimetre.

24. Suppose a 1-L can of paint covers 11 m².

a) How many cans of paint would you need to paint a ceiling that is 5.2 m by 5.2 m? Show your work.

b) Determine the maximum dimensions of a square ceiling you could paint with 4 L of paint. Express your answer to the nearest tenth of a metre.

25. Close to the surface of the moon, the time a dropped object takes to reach the surface can be determined using the formula $t = \sqrt{\frac{h}{0.81}}$. The time, t, is in seconds, and the height, h, is in metres. If an object is dropped from a height of 200 m, how long does it take to reach the surface of the moon? Express your answer to the nearest tenth of a second.



***MathLinks 9*, pages 82–83**

Suggested Timing

40–50 minutes

Materials

- ruler
- calculator
- grid paper

Blackline Masters

Master 4 Number Lines
Master 8 Centimetre Grid Paper
Master 9 0.5 Centimetre Grid Paper
BLM 2–5 Section 2.1 Extra Practice
BLM 2–7 Section 2.2 Extra Practice
BLM 2–9 Section 2.3 Extra Practice
BLM 2–11 Section 2.4 Extra Practice

Planning Notes

Have students work independently to complete the review questions. Encourage students to refer to the information in their Foldable, their worked exercises for the section, their Frayer models, their Math Learning Log, or the modelled examples in the appropriate section of the student resource. When students encounter difficulties, they could discuss strategies with other students and include successful strategies in appropriate sections of their Foldable. Encourage students to consider alternative strategies for solving problems and to ask about questions they found difficult.

You may wish to have students record the question numbers from 5 to 25 in two columns in their notebook. As they complete each question, have students record which ones they needed a little help with, a lot of help with, or no help with. Students can use this information to identify sections they particularly need to revisit before the practice test.

Meeting Student Needs

- Allow students to complete the chapter review using a combination of oral responses, written responses, and diagrams.
- Encourage students to use their Foldable and to add new notes if they wish.
- Encourage students to use the strategy of their choice to answer questions, when applicable.
- Students who require more practice on a particular topic may refer to **BLM 2–5 Section 2.1 Extra Practice**, **BLM 2–7 Section 2.2 Extra Practice**, **BLM 2–9 Section 2.3 Extra Practice**, and **BLM 2–11 Section 2.4 Extra Practice**.

Gifted and Enrichment

- Some students may already be familiar with the skills handled in this review. To provide enrichment and extra challenge for gifted students, go to www.mathlinks9.ca and follow the links.

Assessment	Supporting Learning
Assessment *for* Learning	
Chapter 2 Review The Chapter 2 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource.	• Have students check the contents of the What I Need to Work On section of their Foldable and do at least one question related to each listed item. • Have students revisit any section that they are having difficulty with prior to working on the chapter test. • Provide students who need them with copies of **Master 4 Number Lines, Master 8 Centimetre Grid Paper**, and **Master 9 0.5 Centimetre Grid Paper** to use as they work on the questions.