

8

Chapter Review

Chapter 8 Review

Key Words

For #1, fill in each blank by selecting from the terms provided. Terms can be used more than once.

1. In the $\frac{2}{3}k + \frac{1}{2} = -\frac{5}{6}$,
- k is a **A**,
 - $\frac{2}{3}$ is a **B**,
 - $\frac{1}{2}$ is a **C**, and
 - $-\frac{5}{6}$ is a **D**.

- A** numerical coefficient
- B** variable
- C** constant
- D** equation

For #2 and #3, unscramble the letters to complete the statements using key words. Explain the meanings of the key words.

2. Subtraction is the **NOIS IET O P A T E R O P**.

3. When solving equations, you can remove brackets using the **O P P R I S I T E T R U B E D Y V I R T**.

8.1 Solving Equations: $ax = b$, $\frac{x}{a} = b$, $\frac{a}{x} = b$, pages 292–303

4. Model the solution to the equation $\frac{x}{2} = -0.4$ on a number line. What is the solution?

5. Solve and check.

- a) $4d = -\frac{2}{5}$
 b) $2.68 = \frac{y}{3}$
 c) $\frac{3.5}{h} = -0.2$
 d) $-7.6u = -14.44$

6. Solve. Express each solution to the nearest tenth.

- a) $67.5 = -14.3v$
 b) $\frac{-68.3}{k} = -7.6$

7. The density of an object, D , in grams per cubic centimetre, is defined by $D = \frac{m}{V}$. In this formula, m is the mass, in grams, and V is the volume, in cubic centimetres. The density of pure iron is 7.87 g/cm^3 .

- a) What is the mass of a piece of pure iron with a volume of 5.5 cm^3 ?
 b) What is the volume of a piece of pure iron with a mass of 98.375 g ?

8. Raj and Tom are the top scorers on their soccer team. One season, Raj scored one quarter of their team's goals and Tom scored one sixth of their team's goals. Raj and Tom scored a total of 25 goals. How many goals did their team score?

8.2 Solving Equations: $ax + b = c$, $\frac{x}{a} + b = c$, pages 304–313

9. Model the solution to the equation $2x + \frac{1}{12} = \frac{3}{4}$ on a number line. What is the solution?

10. Nona solved the equation $-3.3g + 1.5 = -8.4$ as shown.

$$\begin{array}{r} -3.3g + 1.5 = -8.4 \\ -3.3g + 1.5 - 1.5 = -8.4 - 1.5 \\ -3.3g + -1.5 = -9.9 \\ -3.3g = -11.4 \\ \frac{-3.3g}{-3.3} = \frac{-11.4}{-3.3} \\ g = 3.45 \end{array}$$

- a) What mistake did Nona make?
 b) What is the correct solution?

11. Solve and check.

- a) $\frac{r}{1.6} + 5.9 = -3.2$
 b) $2.05 = 0.9x - 6.5$
 c) $\frac{2}{5} = \frac{2}{3} - \frac{r}{5}$
 d) $2\frac{1}{2} + 1\frac{1}{6}v = -\frac{5}{6}$

12. Oksana paid a \$14.00 handling charge to buy four Leela Gilday concert tickets on the Internet. The total cost of her order, including the handling charge, was \$153.80. What was the cost of each ticket?

Did You Know?

Leela Gilday was born and raised in Yellowknife, Northwest Territories. She is a singer/songwriter from the Dene Nation. Leela started singing at an early age, and her performing career began at the Folk on the Rocks Music Festival when she was eight years old. Leela now performs across Canada and abroad with her band.

15. Solve $0.11 = -3(1.93 + m)$. Express the solution to the nearest hundredth.

16. An equilateral triangle has a perimeter of 17.85 m. The side length of the triangle, in metres, is $2k - 0.5$. What is the value of k ?

17. Lorna took three of her friends to visit the zoo. The bus fares cost \$5.50 per person. The cost of admission to the zoo was the same for each person in the group. Lorna spent \$109 altogether on fares and admission. What was the cost of each admission?

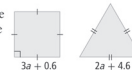


8.4 Solving Equations: $ax = b + cx$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$, pages 322–329

18. Solve and check.

- a) $\frac{1}{5}n + \frac{3}{2} = \frac{3}{10}n$
 b) $-0.25f = 0.35 - 0.45f$
 c) $12.4g + 34.3 = 9.5 - 3.1g$
 d) $1.4(2h + 3) = 0.9(3h - 2)$
 e) $\frac{3v + 2}{3} = \frac{2v - 1}{4}$

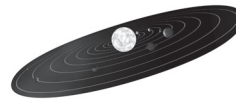
19. The square and the equilateral triangle have equal perimeters.



- a) What is the value of a ?
 b) What is the perimeter of each shape?

20. The perimeter of a rectangle is 3.5 times the length. The width is 2.5 cm less than the length. What is the width?

13. The sun takes 25.38 Earth days to rotate once about its axis. This time is 3.92 Earth days less than half the time that Mercury takes to rotate once about its axis. How many Earth days does Mercury take to rotate once about its axis?



8.3 Solving Equations: $a(x + b) = c$, pages 314–321

14. Solve and check.

- a) $3(5.8 + e) = -2.7$
 b) $-\frac{5}{6} = \frac{r - 4}{3}$
 c) $10.1 = \frac{0.9 + h}{-2}$
 d) $-\frac{4}{3}(q + 1) = -1\frac{1}{2}$

MathLinks 9, pages 330–331

Suggested Timing

40–50 minutes

Materials

- ruler

Blackline Masters

Master 4 Number Line

BLM 8–6 Section 8.1 Extra Practice

BLM 8–8 Section 8.2 Extra Practice

BLM 8–10 Section 8.3 Extra Practice

BLM 8–12 Section 8.4 Extra Practice

Planning Notes

Have students work independently to complete the review questions. Encourage students to refer to their Foldable, concept map, and then the specific section in the student resource and/or their notebook. 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 numbers from 4 to 20 in two columns in their notebook. As they complete each question, have students record the ones with which they needed no help, some help, and lots of help. Students can use this information to identify sections they particularly need to revisit before the practice test.

Meeting Student Needs

- Students who require more practice on a particular topic may refer to **BLM 8–6 Section 8.1 Extra Practice**, **BLM 8–8 Section 8.3 Extra Practice**, **BLM 8–10 Section 8.3 Extra Practice**, and **BLM 8–12 Section 8.4 Extra Practice**.
- Allow students to complete the Chapter Review using a combination of verbal description, diagrams, and written answers.
- Encourage students to use the strategy of their choice to answer questions, when applicable.

ELL

- Consider giving fewer word problems to English language learners.
- In #12, remind English language learners that a handling charge is a one-time cost.
- Clarify the meaning of the concepts in #13 by helping students draw a picture of this situation in their notebook.

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.



Web Link

There are many sites on the Internet that provide students with the opportunity to test and practise their algebra skills. Students can go to www.mathlinks9.ca and follow the links to find interactive algebra quizzes, and games that can be played with a partner.

Assessment	Supporting Learning
Assessment for Learning	
<p>Chapter 8 Review</p> <p>The Chapter 8 Review is an opportunity for students to assess themselves by completing selected questions in each section and then checking their answers against the answers in the back of the student resource.</p>	<ul style="list-style-type: none"> • 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. • You may wish to provide students with Master 4 Number Line to complete #4 and 9. • Have students revisit any section that they are having difficulty with prior to working on the chapter test.