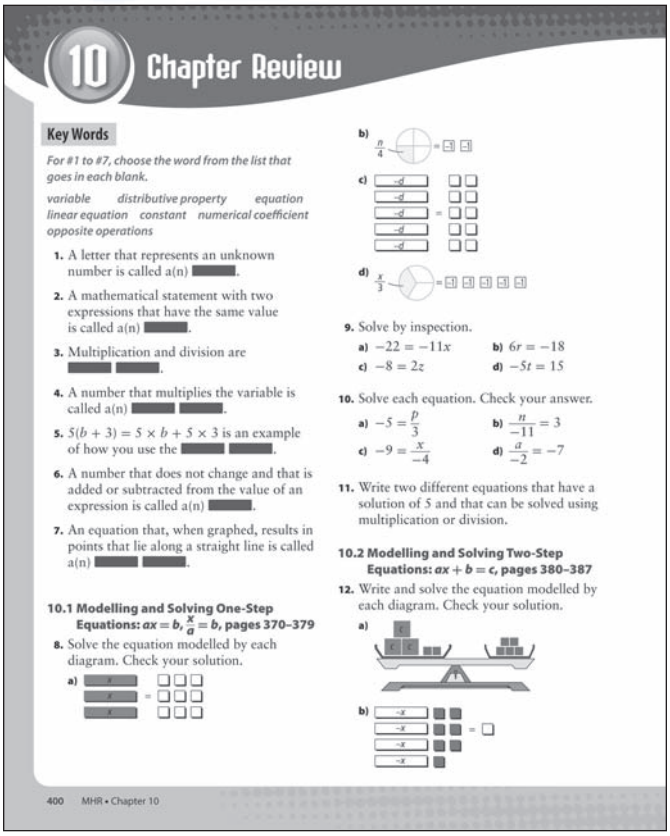
10 Chapter Review



10 Chapter Review

Key Words

For #1 to #7, choose the word from the list that goes in each blank.

variable distributive property equation linear equation constant numerical coefficient opposite operations

1. A letter that represents an unknown number is called a(n) [redacted].
2. A mathematical statement with two expressions that have the same value is called a(n) [redacted].
3. Multiplication and division are [redacted] [redacted].
4. A number that multiplies the variable is called a(n) [redacted] [redacted].
5. $5(b + 3) = 5 \times b + 5 \times 3$ is an example of how you use the [redacted] [redacted].
6. A number that does not change and that is added or subtracted from the value of an expression is called a(n) [redacted].
7. An equation that, when graphed, results in points that lie along a straight line is called a(n) [redacted] [redacted].

10.1 Modelling and Solving One-Step Equations: $ax = b$, $\frac{x}{a} = b$, pages 370–379

8. Solve the equation modelled by each diagram. Check your solution.

a) [redacted]

b) $\frac{n}{4}$ [redacted]

c) [redacted]

d) $\frac{x}{3}$ [redacted]

9. Solve by inspection.
   a) $-22 = -11x$ b) $6r = -18$
   c) $-8 = 2z$ d) $-5t = 15$
10. Solve each equation. Check your answer.
    a) $-5 = \frac{p}{3}$ b) $\frac{n}{-11} = 3$
    c) $-9 = \frac{x}{-4}$ d) $\frac{a}{-2} = -7$
11. Write two different equations that have a solution of 5 and that can be solved using multiplication or division.

10.2 Modelling and Solving Two-Step Equations: $ax + b = c$, pages 380–387

12. Write and solve the equation modelled by each diagram. Check your solution.

a) [redacted]

b) [redacted]

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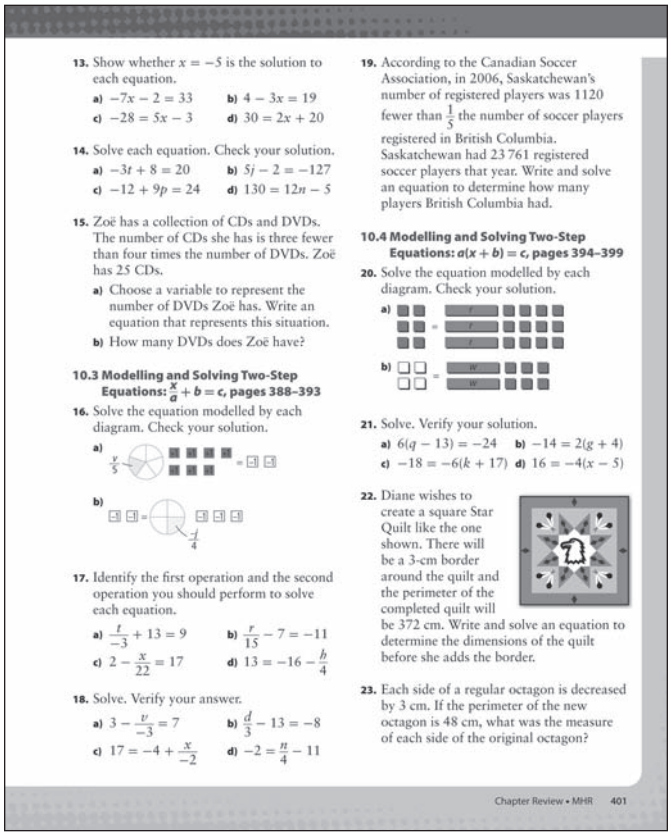

13. Show whether $x = -5$ is the solution to each equation.
    a) $-7x - 2 = 33$ b) $4 - 3x = 19$
    c) $-28 = 5x - 3$ d) $30 = 2x + 20$
14. Solve each equation. Check your solution.
    a) $-3t + 8 = 20$ b) $5j - 2 = -127$
    c) $-12 + 9p = 24$ d) $130 = 12n - 5$
15. Zoë has a collection of CDs and DVDs. The number of CDs she has is three fewer than four times the number of DVDs. Zoë has 25 CDs.
    a) Choose a variable to represent the number of DVDs Zoë has. Write an equation that represents this situation.
    b) How many DVDs does Zoë have?

10.3 Modelling and Solving Two-Step Equations: $\frac{x}{a} + b = c$, pages 388–393

16. Solve the equation modelled by each diagram. Check your solution.

a) [redacted]

b) [redacted]

17. Identify the first operation and the second operation you should perform to solve each equation.
    a) $\frac{t}{-3} + 13 = 9$ b) $\frac{r}{15} - 7 = -11$
    c) $2 - \frac{x}{22} = 17$ d) $13 = -16 - \frac{h}{4}$
18. Solve. Verify your answer.
    a) $3 - \frac{v}{-3} = 7$ b) $\frac{d}{3} - 13 = -8$
    c) $17 = -4 + \frac{x}{-2}$ d) $-2 = \frac{n}{4} - 11$
19. According to the Canadian Soccer Association, in 2006, Saskatchewan's number of registered players was 1120 fewer than $\frac{1}{5}$ the number of soccer players registered in British Columbia. Saskatchewan had 23 761 registered soccer players that year. Write and solve an equation to determine how many players British Columbia had.

10.4 Modelling and Solving Two-Step Equations: $a(x + b) = c$, pages 394–399

20. Solve the equation modelled by each diagram. Check your solution.

a) [redacted]

b) [redacted]

21. Solve. Verify your solution.
    a) $6(q - 13) = -24$ b) $-14 = 2(g + 4)$
    c) $-18 = -6(k + 17)$ d) $16 = -4(x - 5)$
22. Diane wishes to create a square Star Quilt like the one shown. There will be a 3-cm border around the quilt and the perimeter of the completed quilt will be 372 cm. Write and solve an equation to determine the dimensions of the quilt before she adds the border.

23. Each side of a regular octagon is decreased by 3 cm. If the perimeter of the new octagon is 48 cm, what was the measure of each side of the original octagon?

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***MathLinks 8*, pages 400–401**

Suggested Timing
40–50 minutes

Materials
- algebra tiles
- cups and counters

Blackline Masters
Master 15 Algebra Tiles
BLM 10–5 Section 10.1 Extra Practice
BLM 10–7 Section 10.2 Extra Practice
BLM 10–9 Section 10.3 Extra Practice
BLM 10–11 Section 10.4 Extra Practice

Planning Notes

For #1 to #7, students may wish to review the words in pairs. One student could read the definitions and the other could say the word. Alternatively, they might do the exercise backward: one student could read the word and the other could find the definition.

Have students work independently to complete the remaining review questions. Encourage students to refer to the information in their chapter Foldable and then to the specific section in the student resource and/or their notebooks. When students encounter difficulties, they could discuss strategies with other students and include successful strategies in appropriate sections of their chapter Foldable. Encourage students to consider alternative methods for solving problems and to ask about questions they found difficult.

You may wish to have students record the numbers from 8 to 23 in two columns in their notebooks. As they read each question, have students indicate the questions they need 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.

Students may need manipulatives, such as algebra tiles, to complete #8, #12, and #20.

Meeting Student Needs

- Encourage students to use their chapter Foldable and to add new notes if they wish.
- Students who require more practice on a particular topic may refer to **BLM 10–5 Section 10.1 Extra Practice**, **BLM 10–7 Section 10.2 Extra Practice**, **BLM 10–9 Section 10.3 Extra Practice**, and **BLM 10–11 Section 10.4 Extra Practice**.

ELL

- Have students create a vocabulary list in their chapter Foldable. Matching a picture or symbol with each definition helps students consolidate their understanding of the vocabulary.
- Have some students complete fewer word problems as deciphering the language may be too challenging and time consuming.

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.mathlinks8.ca and follow the links.

Common Errors

- Some students may use the incorrect order of operations to evaluate an expression or they may use the incorrect reverse order of operations to solve for the unknown in a linear equation.

R_x Have students continue to use manipulatives to assist them with their thinking.

- Some students may use information from problem situations incorrectly resulting in an incorrect equation for that situation.

R_x Have students review the list of "operation words" that the class created in section 10.2. Encourage them to compare their equations with a classmate's.

Assessment	Supporting Learning
Assessment *for* Learning	
Chapter 10 Review The Chapter 10 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.	• Allow students to complete the chapter review using any combination of manipulatives (algebra tiles, cups and counters, etc.), diagrams, or symbols to model and solve equations. If algebra tiles are not available, distribute **Master 15 Algebra Tiles**. • Have students check the contents of the What I Need to Work On section of their chapter Foldable and do at least one question related to each item in that section. • Have students revisit any section that they are having difficulty with prior to working on the chapter test.