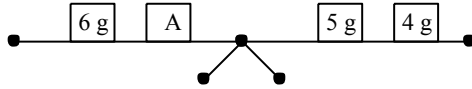




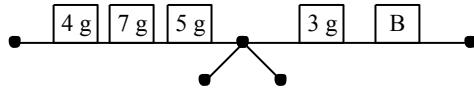
10. Solve this equation:  $n + 12 = 25$   
 a. 13                      b. 20                      c. 37                      d. 11

11. The 2 pans of the scales are balanced. Find the value of the unknown mass A.



- a. 3 g                      b. 14 g                      c. 48 g                      d. 7 g

12. The 2 pans of the scales are balanced. Find the value of the unknown mass B.



- a. 13 g                      b. 5 g                      c. 11 g                      d. 47 g

13. Solve this equation:  $5 + 11 = y + 8$   
 a. 8                      b. 47                      c. 7                      d. 53

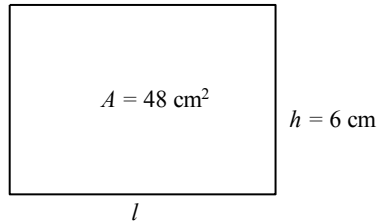
14. Solve this equation:  $v + v + 7 = 6 + 4$   
 a. 1.5                      b. 8.5                      c. 3                      d. 2

15. Solve this equation:  $4z + 32 = 44$   
 a. 3                      b. 19                      c. 8                      d. 72

16. Write an equation for this sentence. Then solve the equation.  
 Five more than a number is 15.  
 a.  $x + 5 = 15, x = 10$                       c.  $x + 5 = 15, x = 3$   
 b.  $5x = 15, x = 10$                       d.  $5x = 15, x = 3$

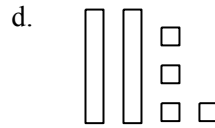
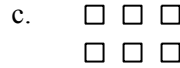
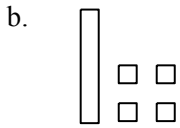
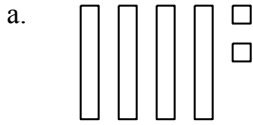
17. A 2-pan balance has a mass of 8 g and a mass of 4 g on the left pan, and an unknown mass and a mass of 7 g on the right pan. What is the value of the unknown mass if the 2 pans are balanced?  
 a. 5 g                      b. 3 g                      c. 11 g                      d. 2 g

18. The area of this rectangle is given by the formula  $A = l \times h$ .  
 Find the length  $l$  of the rectangle.



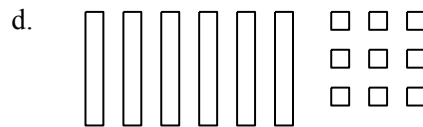
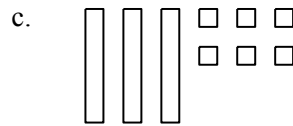
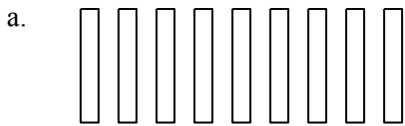
- a. 8 cm                      b. 42 cm                      c. 288 cm                      d. 41 cm

19.  This tile represents  $x$ .  
 This tile represents  $+1$ .  
 Identify the tiles that model  $2x + 4$ .



- \_\_\_\_\_ 20. This tile represents  $x$ .  
 This tile represents  $+1$ .

Identify the tiles that model  $3x + 6$ .

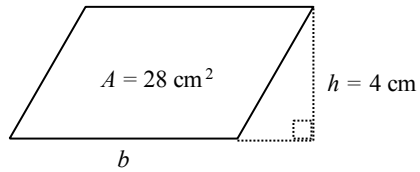


- \_\_\_\_\_ 21. Solve this equation:  $x + 2 = 6$   
 a. 4                                      b. 8                                      c. 12                                      d. 3
- \_\_\_\_\_ 22. Solve this equation:  $x - 5 = 10$   
 a. 15                                      b. 5                                      c. 8                                      d. 2
- \_\_\_\_\_ 23. Solve this equation:  $-7 = x - 2$   
 a. -5                                      b. 5                                      c. 9                                      d. -9
- \_\_\_\_\_ 24. A number increased by 4 is 9. Write an equation to find the number. Solve the equation.  
 a.  $x + 4 = 9, x = 5$                                       c.  $x - 9 = 4, x = 13$   
 b.  $x + 4 = 9, x = -5$                                       d.  $x + 9 = 4, x = -13$
- \_\_\_\_\_ 25. Overnight, the temperature dropped  $9^{\circ}\text{C}$  to  $-3^{\circ}\text{C}$ . Write an equation to find the starting temperature. Solve the equation.  
 a.  $x - 9 = -3, x = 6$                                       c.  $x + 9 = 3, x = -6$   
 b.  $x - 3 = -9, x = -6$                                       d.  $x + 3 = 9, x = 6$

**Short Answer: Do #'s 26 and 29. Choose only one of #'s 27 and 28.**

26. A number decreased by 7 is 6.  
 a) Write an equation you can solve to find the number.  
 b) Solve the equation to find the number.
27. The **perimeter** of a regular hexagon is 48 cm.  
 a) Write an equation you can solve to find the length of a side,  $L$  cm.  
 b) Solve the equation to find the side length.
28. The **area** of this parallelogram is given by the formula  $A = b \times h$ .

Substitute the values for  $A$  and  $h$  in the formula to get an equation you can solve for the base  $b$ . Then find the length of the base.



29. Solve this equation:  $x + x - 4 = 6$

**Problem**

30. Solve this equation:  $x + 5 - 6 + x + 5 = 16$   
Show your steps.

31. Solve this equation:  $x + 5 - 3 + x + 12 = x + 4$   
Show your steps.

## MMS7Ch6MURQuiz

### Answer Section

#### MULTIPLE CHOICE

- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR4                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR4                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Problem-solving Skills
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Communication
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Communication
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Communication
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Easy                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR6                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding
- ANS: A                   PTS: 1                   DIF: Moderate                   REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding

15. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.2 Using a Model to Solve Equations                   LOC: 7.PR3 | 7.PR7  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
16. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.2 Using a Model to Solve Equations                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Communication
17. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.2 Using a Model to Solve Equations                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
18. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.2 Using a Model to Solve Equations                   LOC: 7.PR3 | 7.PR7  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Problem-solving Skills
19. ANS: D                   PTS: 1                   DIF: Easy  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR7  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
20. ANS: C                   PTS: 1                   DIF: Easy  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR7  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
21. ANS: A                   PTS: 1                   DIF: Easy  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
22. ANS: A                   PTS: 1                   DIF: Easy  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
23. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Conceptual Understanding
24. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Communication
25. ANS: A                   PTS: 1                   DIF: Moderate  
REF: 6.3 Solving Equations Involving Integers                   LOC: 7.PR3 | 7.PR6  
TOP: Patterns and Relations (Variables and Equations)                   KEY: Communication

## SHORT ANSWER

26. ANS:  
a)  $x - 7 = 6$   
b)  $x = 13$
- PTS: 1                   DIF: Moderate                   REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                   TOP: Patterns and Relations (Variables and Equations)  
KEY: Communication
27. ANS:  
A regular hexagon has 6 sides.  
a)  $L = \frac{48}{6}$   
b)  $L = 8$   
The length of a side is 8 cm.

PTS: 1                    DIF: Moderate            REF: 6.1 Solving Equations  
LOC: 7.PR3 | 7.PR7                                    TOP: Patterns and Relations (Variables and Equations)  
KEY: Communication

28. ANS:  
The length of the base is 7 cm.

PTS: 1                    DIF: Moderate            REF: 6.2 Using a Model to Solve Equations  
LOC: 7.PR3 | 7.PR7                                    TOP: Patterns and Relations (Variables and Equations)  
KEY: Problem-solving Skills

29. ANS:  
 $x = 5$

PTS: 1                    DIF: Moderate            REF: 6.3 Solving Equations Involving Integers  
LOC: 7.PR3 | 7.PR6                                    TOP: Patterns and Relations (Variables and Equations)  
KEY: Conceptual Understanding

## PROBLEM

30. ANS:  
 $x + 5 - 6 + x + 5 = 16$   
 $x + x + 4 = 16$   
 $2x = 12$   
 $x = 6$

PTS: 1                    DIF: Moderate            REF: 6.3 Solving Equations Involving Integers  
LOC: 7.PR3 | 7.PR7                                    TOP: Patterns and Relations (Variables and Equations)  
KEY: Procedural Knowledge | Communication

31. ANS:  
 $x + 5 - 3 + x + 12 = x + 4$   
 $x + x + 14 = x + 4$   
 $x + 14 = 4$   
 $x + 14 - 14 = 4 - 14$   
 $x = -10$

PTS: 1                    DIF: Difficult            REF: 6.3 Solving Equations Involving Integers  
LOC: 7.PR3 | 7.PR7                                    TOP: Patterns and Relations (Variables and Equations)  
KEY: Procedural Knowledge | Communication