✓&✓✓® check and double check!! MATH 8

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NOTE: See centre of book for tear-out answer key.

Scholar's Choice
Helping you make learning fun!

Printed in Canada

ISBN NO. 0-88809-053-6

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Publications of Revision 2002

Contents on recycled paper.

Unknown Numbers

Mathematical symbols can be used to help solve word puzzles.

For example: "If twelve times a number is increased by sixteen, the result is forty. What is the number?

This can be translated into mathematical symbols.

12 a	+	16	=	40
Twelve times a number	is increased by	sixteen	the result is	forty

and then solved. a = 2

Now try these!

1. Nine times a number is equal to three times twenty–seven. What is the number?

   9b = 3 x 27
   9b = 81
   b = ___

2. What number divided by nine is seven?

3. Five times what number is equal to one hundred divided by two?

4. Ten times a number is increased by six and the result is ninety–six. What is the number?

5. Four times what number is equal to ten squared?

6. What number cubed is equal to twenty–seven?

7. Sixty–four is the result when two numbers are multiplied together. One of the numbers is four. What is the other number?

8. Four times a number is added to the square of that number and the result of forty–five. What is the number?

Equations

Find the value of the unknown in the following equations.

1. $4a + 2 = 10$
   $a = 2$

   Check $4 \times 2 + 2 = 10$

2. $7b \div 3 = 7$
   $b =$ ___

   Check _____

3. $c - 18 = 4$
   $c =$ ___

   Check _____

4. $3d \times 4 = 12$
   $d = 1$

   Check _____

5. $4e + 4 = 20$
   $e =$ ___

   Check _____

6. $f \div 9 = 1$
   $f =$ ___

   Check _____

7. $5g - 4 = 21$
   $g =$ ___

   Check _____

8. $2h \div 4 = 3$
   $h =$ ___

   Check _____

9. $2i + 6 = 20$
   $i =$ ___

   Check _____

10. $j + 7 = 20$
    $j =$ ___

    Check _____

11. $k^2 + 4 = 104$
    $k =$ ___

    Check _____

12. $L^2 - 4 = 60$
    $L =$ ___

    Check _____

13. $(m \div 4) + 6 = 9$
    $m =$ ___

    Check _____

14. $(n - 3) \times 2 = 22$
    $n =$ ___

    Check _____

15. $(o \div 8) \times 6 = 12$
    $o =$ ___

    Check _____

16. **Using the values of the letters in the questions above, find the "value" of each word.**
    e.g. dad $1 + 2 + 1 = 4$

    (a) label → ___ + ___ + ___ + ___ + ___ = 25

    (b) cog → ___ + ___ + ___ = 43

    (c) high → ___ + ___ + ___ + ___ = 24

    (d) man → ___ + ___ + ___ = 28

    (e) foam → ___ + ___ + ___ + ___ = 39

    (f) jack → ___ + ___ + ___ + ___ = 47

Crack The Code

Solve the following equations, then use the answers to "crack" the code below.

1. $a^3 = 1$

2. $(c + 4) \times 2 = 18$

3. $(e \div 3) + 2 = 5$

4. $f^2 = 100$

5. $(2h + 6) - 4 = 8$

6. $(i - 4) \times 3 = 6$

7. $(2L + 9) \times 2 = 62$

8. $n^3 = 64$

9. $(0 + 7) + 3 = 22$

10. $(p \div 4) - 2 = 0$

11. $(r - 7) \times 6 = 36$

12. $s^2 - 9 = 40$

13. $t^4 + 6 = 22$

2	12	13	12	4	2	12

6	7

2	3	9

5	1	8	6	2	1	11
	A				A	

12	10

12	4	2	1	13	6	12
			A			