7 + x = 14
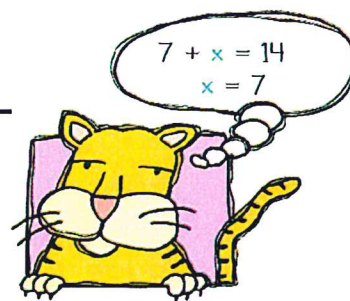x = 7

Algebraic Expressions

Tell whether each algebraic equation is correct.
Write <u>true</u> or <u>not true</u> on the line next to each.

1. $a - 6 = 4$, $a = 10$ ___True___

2. $\frac{c}{12} = 2$, $c = 6$ ___Not true___

3. $\frac{d}{6} = 3$, $d = 18$ ___True___

4. $8z = 48$, $z = 7$ ___Not true___

5. $x + x + 7 = 16$, $x = 4$ ___Not true___

6. $\frac{30}{5} = h$, $h = 6$ ___True___

7. $\frac{8}{i} = 1$, $i = 8$ ___True___

8. $13 - z = 8$, $z = 4$ ___Not true___

If the algebraic expression shown is true, write <u>true</u> on the line. If the algebraic expression is not true, cross out the value for the variable and write a new value on the line to make it true.

> **example:** $a - 1 = 6$, $a = 8$ ___Not true___
>
> Since this is not true, cross out the 8 and write <u>a = 7</u> on the line.

9. $9 - w = 1$, ~~w = 9~~ w = 8 ___Not true___

10. $\frac{p}{2} = 5$, $p = 10$ ___True___

11. $\frac{18}{k} = 2$, $k = 9$ ___True___

12. $12 + j = 21$, ~~j = 6~~ j = 9 ___Not true___

13. $7a = 28$, ~~a = 3~~ a = 4 ___Not true___

14. $\frac{24}{y} = 4$, ~~y = 8~~ y = 6 ___Not true___

15. $\frac{36}{6} = b$, ~~b = 3~~ b = 6 ___Not true___

16. $17 - v = 5$, $v = 12$ ___True___

17. Is this equation in the box to the right always false, no matter what value you give the variable? Explain your answer.
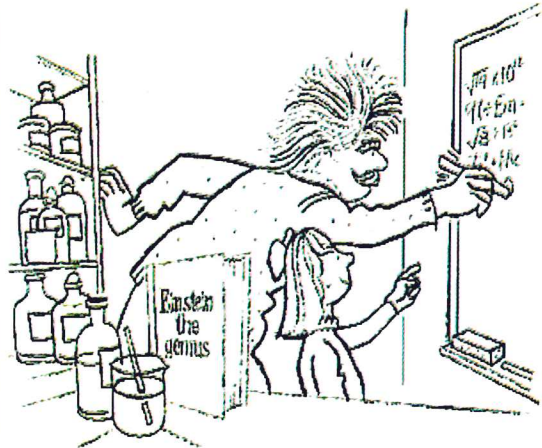
> 0b = 4

___Yes because if you times anything by 0 it will only be zero.___

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Writing Basic Algebraic Expressions

operation	example written numerically	example with a variable
addition (sum)	3 + 2	6 + x
subtraction (difference)	18 - 6	14 - a
multiplication (product)	4 x 5	9c
division (quotient)	16 ÷ 4	$\frac{18}{z}$

Rewrite each question as an algebraic expression.

1. What is the sum of a and 8? _a + 8___8 + a_____

2. What is the product of y and 10? _10y_____

3. What do you get when you subtract 9 from b? _b - 9_____

4. What is c divided by 22? _c/22_____

5. What is 12 decreased by p? _12 - p_____

Rewrite each phrase as an algebraic expression.

6. c multiplied by 5 _c5___5c____   7. 10 larger than y _y + 10 or 10 + 9_____

8. 9 less than e _c - 9_____   9. triple r _3r_____

10. p divided by 4 _p/4_____   11. quadruple f _f4 or 4f_____

Write your answer to the word problems in the form of an algebraic expression.

12. There are x students trying out for a solo in a chorus concert. Only 6 will be chosen. How many students will not be chosen? _x - 6_____

13. There are y students who volunteered to pull weeds in the school garden. The principal said she wishes she had three times as many volunteers. How many volunteers would the principal like to have? _y3 or 3y_____

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